

Client No.: 9-15652-2US

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Number of pages including this cover sheet: **81**  
 Date: **September 11, 2007**  
 From: **Paul S. Sharpe**  
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To	Company - City	Phone	Facsimile
ART UNIT 1712 Attention: Examiner Peng	United States Patent and Trademark Office		571-273-1091

**Message**

Please see attached.

Re: United States Patent Application No. 10/815,826  
 Filed: April 2, 2004  
 Title: Drilling Fluid  
 Inventor: Len Baltoiu  
 Our Ref: 9-15652-2US

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001/081

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File No. 9-15652-2US

Date: September 11, 2007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Len Baltoiu  
Filed: April 2, 2004  
Serial No.: 10/815,826  
Title: DRILLING FLUID  
Examiner: Philip C. Tucker  
Group Art Unit: 1712

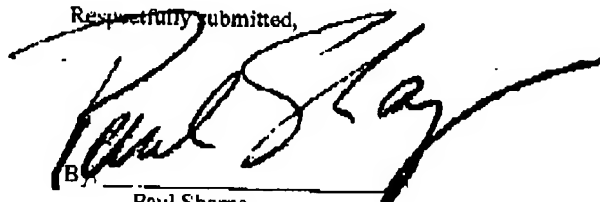
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Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA  
22313-1450 U.S.A.

Sir:

In response to Examiner Peng's telephone request of September 10, 2007, submitted herewith is the MS-DS information which was inadvertently omitted from our response dated June 7, 2007.

Respectfully submitted,



By \_\_\_\_\_  
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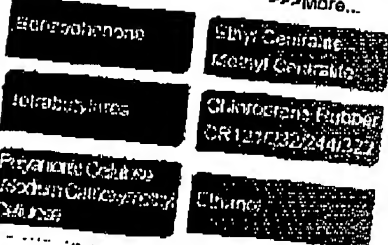
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### Polyaniionic Cellulose (PAC) Specification

Formula:  $(C_6H_7O_2(OH)_3-n(OCH_2COONa)_n)_x$   
**PAC-HV (High-viscosity)**  
 Appearance White or light yellow  
 Substituting degree 0.85-1.10  
 Apparent viscosity in water, mPa.s  $\geq 50$  (3.7g/l)  
 Apparent viscosity in saturated brine, mPa.s  $\geq 60$  (3.7g/l)  
 Water, %  $\leq 9$   
 pH 6.0-8.0  
 Mud generating capacity  $\geq 400m^3$

**PAC-LV (Low-viscosity)**  
 Appearance White or light yellow  
 Substituting degree 0.85-1.10  
 Apparent viscosity in water, mPa.s  $\leq 6.0$  (2.286 g/l)  
 Apparent viscosity in saturated brine, mPa.s  $\leq 6.0$  (2.857 g/l)  
 Apparent viscosity in 4% brine, mPa.s  $\leq 6.0$  (4.286 g/l)  
 Water %  $\leq 10$   
 pH 6.0-8.6  
 Filtration loss, ml  $\leq 13.0$  (3.6g/l)

**Characteristic**  
 Polyaniionic cellulose is white or yellowish powder that is odorless and soluble in water to form thick liquid. It has good heat-stability and high salt. It is not fermented. Polyaniionic cellulose (PAC) is a sodium carboxymethyl cellulose with high uniformity, high degree of substitution and high quality.

**Usage**  
 The product is used as an additive for drilling mud, especially used in salt-rich area or under the sea.

**Packing**  
 The inner layer is polyethylene film bag. The outer layer is plastic woven composite plastic woven bag. Net weight is 25kg per bag.


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**Oilfield Glossary**

**polyanionic cellulose**

**1. n. [Drilling Fluids]**

A cellulose derivative similar in structure, properties and usage in drilling fluids to carboxymethylcellulose. PAC is considered to be a premium product because it typically has degree of carboxymethyl substitution and contains less residual NaCl than technical grade carboxymethylcellulose, although some PACs contain considerable NaCl.

See: calcium carbonate, carboxymethylcellulose, PAC, sodium mud

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## Oilfield Gl

### PAC

1. n. [Drilling Fluids]

See: [polyanionic cellulose](#)

<http://www.glossary.oilfield.slb.com/Display.cfm?Term=PAC>

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Brand Name	Generic Name/Composition	Primary Function	Manufacturer/Supplier
18A12	Liquid PHPA	Fluocutanes	Alford Catalysts
ERT Water Soluble Pak	Myagor Powder	Fluocutanes	Condomas United
Abandonpak	Many functional powder fluid inhibitor (water soluble)	Viscosity Builders	ICD
Abandonpak (SD)	Oil dispersing, multi-use packer fluid inhibitor (water soluble)	Viscosity Builders	ICD
AB 2B Medium Plug	Steel benzonics	Loss Control on Material	ICD
ABI High Yield Bentonite	Charged Wyoming bentonite	Viscosity	Milkenum Technologies Ltd.
ABI Premium 154	Wyoming bentonite	Viscosity	Milkenum Technologies Ltd.
ABI Universal Gel	Uncharged Wyoming bentonite	Viscosity	Milkenum Technologies Ltd.
ADG 1000	Shale & clay inhibitor for Aphron 100	Shale Control Inhibitors	Milkenum Technologies Ltd.
Advanced Carbon	Charcoal	Buraco Active Agents	AMCIBA Specialty Chemicals
Activator I	Thermal stabilizer for API/ADON 100	Polymer Stabilizers	AI
Activator II	Thermal stabilizer for API/ADON 100	Polymer Stabilizers	MJ Ryan/Parsons
Adipal	Oil mud HTWD foam reducer	Polymer Stabilizers	MJ Ryan/Parsons
AK-70	Urethane	Phase Reducers	Harrell
Akagite-E	Oxidized alkyl phenol liquid	Emulsifiers	Baroid
Akagite-E	Mixed oxidized phenols	Surfactant Agents	Baroid
Alconet 100 RD	High molecular weight dispersible polyethylene	Fluocutanes	AI/CIBA specialty chemicals
Alconet 100/00	Low MW anionic polyacrylamide	Shale Control Inhibitors	AMCIBA Specialty Chemicals
Alconet 242	AMPS - polyacrylamide copolymer	Filtering Products	AMCIBA Specialty Chemicals
Alconet 294	Low MW anionic polyacrylamide	Viscosity	AMCIBA Specialty Chemicals
Alconet 338 RD	High MW anionic polyacrylamide	Fluocutanes	AI/CIBA specialty chemicals
Alconet 400D	Low MW anionic polyacrylamide	Shale Control Inhibitors	AMCIBA Specialty Chemicals
Alconet 74	Unifil LHM anionic styrene-based polymer	Viscosity, Dispersants	AMCIBA Specialty Chemicals
Alconet 74	Modified acrylic polymer, calcium stable	Viscosity, Dispersants	AMCIBA Specialty Chemicals
Alconet 74L	Liquid anionic acrylic co-polymer, calcium stable	Viscosity, Dispersants	AMCIBA Specialty Chemicals
Alconet 100D	High MW anionic dispersible PHPA	Shale Control Inhibitors	AMCIBA Specialty Chemicals
Alconet 10	Chloroethylene solution	Isocutanes	Baroid
Alconet A-25 D	Dispersible PHPA low viscosity emulsion	Shale Control Inhibitors	AMCIBA Specialty Chemicals
Alconet EA-1	PHPA emulsion	Shale Control Inhibitors	AMCIBA Specialty Chemicals
Alconet EAB	Dispersible PHPA-HMW anionic	Shale Control Inhibitors	AMCIBA Specialty Chemicals
Alconet A-1103 D	Dispersible PHPA-HMW anionic	Fluocutanes	AI/CIBA specialty chemicals
Alconet A-1703 D	Dispersible PHPA-HMW anionic	Fluocutanes	AI/CIBA specialty chemicals
Alconet A-250	Dispersible PHPA low viscosity anionic	Fluocutanes	AI/CIBA specialty chemicals
Alconet C-1003	Cationic	Fluocutanes	AI/CIBA specialty chemicals
Alconet C-787	PHPA cationic HMW	Fluocutanes	AI/CIBA specialty chemicals

Alkaphem B-1000	Liquid PHPA MWW	Viscosifiers	Synchem
Alkaphem N-1000 D	Dispersible PHPA MWW	Flocculants	All / Synchem
Alkaphem N-1000 B	Polyacrylamides	Shale Control Inhibitors	All
Alkaphem S	Polystyrenes	Flocculants	All / Synchem
All Temp	Ad temperature polyamide deflocculant	Thinners / Dispersants	Baker Hughes Inteq
Alphadriil	Liquid shale stabilizer	Shale Control Inhibitors	Conamco United
Apies	Inhibitive aluminum complex	Shale Control Inhibitors	Baker Hughes Inteq
Aluminum Silicate	Aluminum silicate polymer	Defoamer	All
Amphosil	Amino based liquid shale inhibitor (winterized)	Shale Control Inhibitors	ITC
Ammonium Hydroxide	Oxygen scavenger	Surfactant Inhibitor	All
Ammonium Sulphate	Ammonium sulphate	Shale Control Inhibitors	All
Asphion 125	Water based (silicate) deflocculant	Thinners	MH Sweet Petroleum
Aqua Fac LV	Polymeric surfactants	Shale Reducers	BT Chem Supply Ltd
Aqua Fac Regular	Polymeric deflocc	Shale Control Inhibitors	BT Chem Supply Ltd
Aqua-Gel	Cloud-point polyglycol	Shale Control Inhibitors	Baker Hughes Inteq
Aqua-Dek System	Inhibitive alcohol based drilling fluid	Systems	Baker Hughes Inteq
Aquagel	Treated sodium montmorillonite	Filter Cake Reducers	Baroid
Aquagel 1000	Treated sodium montmorillonite	Filter Cake Reducers	Baroid
Aquagel Gold 500	Treated sodium montmorillonite	Viscosifiers	Baroid
Aquagel	Non-toxic oil free deflocculant	Viscosifiers	Baker Hughes Inteq
Aquagel LV	Polymeric surfactants	Shale Control Inhibitors	BT Chem Supply Ltd
Aquagel Regular	Polymeric deflocc	Viscosifiers	BT Chem Supply Ltd
Aqua-Gel D	Carbonaceous surfact	Shale Reducers	BT Chem Supply Ltd
Asphosil D	Surfactant organic blends	Shale Control Inhibitors	MH Sweet Petroleum
Asphosil Supreme	Surfactant organic blends	Shale Control Inhibitors	MH Sweet Petroleum
Asphosil	Low viscosity for oil water systems	Viscosifiers	All
B-1000	Granular Silicate	Viscosifiers	ITC
B.A.S.C. Fluid	Liquid, non-flammable liquid	Viscosifiers	ITC
Barrick	Water based mud for bitumen & heavy oil wells	Systems	Morgan's Fluids
Barrick	Powdered hydrocarbon fluids	Viscosifiers	Baroid
Barrick	Magnesium Oxide pH stabilizer	Viscosifiers	Baroid
Barrick	Based calcium carbonate	Shale Control Inhibitors	Baroid
Barrick	High charge cationic polymer	Shale Control Inhibitors	Baroid
Barrick	Cationic Polymer	Shale Control Inhibitors	Baroid
Barrick	Defoamer for use in tools on systems	Defoamer	Baroid
Barrick	Polystyrene glycol	Defoamer	Baroid
Barrick	Surface active defoamer	Defoamer	Baroid



Borg-Optogen W300	Surfactant active stabilizer	defoamer	Berol
Borolith-N	Neutralizing pH adjustable system	Oxylates	Berol
Borolith	Fluorine amine	corrosion inhibitor	Berol
Borolite	Acrylamide polymeric hydrate powder	Fluoculents	Berol
Borolite	Sodium EO sulphate	Flaming Agents	Berol
Borolite	MCU/EO sodium polyphosphate	Thinner, Dispersants	Berol
Borolite 3000	Oil and emulsion	Viscosity	Berol
Bravura	Temperature stable lignite powder	Phase Reducers	Berol
Bravura	Smart and instant cake	Low Chlorine Materials	Berol
Bravura-Via	Compatibilizer viscoelastic for oils	Viscoelastic	Berol
Bravura-D	Preventer and urea sulphate	corrosion inhibitor	Berol
Bravura-L	Urea and urea sulphate	corrosion inhibitor	Berol
Bronze	Sodium sulphate sulphate	Shale Control Inhibitors	Berol
Bronze	MEQ	Viscoelastic	Berol
Bronze	Preventer and urea sulphate	Viscoelastic	Berol
Bronze	Polyacrylate copolymer	Viscoelastic	Berol
Bronze-D	Dispersant enhanced urea sulphate	Viscoelastic	Berol
Bronze-D Plus	Dispersant added biopolymer	Viscoelastic	Berol
Bronze-L	Liquid vanillin pure biopolymer	Viscoelastic	Berol
Buffy	Processed borates (DeJGD)	Weighting Materials	All
Burton Carbonate	Sodium carbonate	Commercial Chemicals	Imco/Al
Burton	Iron oxide	Weighting Materials	Berol
Burton	Fluorine resistant material	Low Chlorine Material	Berol
Burton	Sodium sulphate (Na2SO4)	Weighting Materials	Berol
Burton 100	All in 100 system	Systems	Berol
Burton	Specialty graded monofunctional fiber sweeping agent	Viscoelastic	Berol
Burton 100	Surfactant/foamant blend	Inhibitors	Berol
Burton	Combination LOM	Low Chlorine Material	Berol
Burton-Spot	Blend of Amine sulfonates	Low Chlorine	Berol
Burton Plus	Blended hydrocarbon powder	Shale Control Inhibitors	Berol
Burton	Co-polymer flocculant and clay extender	Viscoelastic	All Kalm Chemical Group
Burton	Modified organophilic clay	Viscoelastic	Burton Supply Ltd.
Burton	HTSP performance organoclay	Viscoelastic	Burton Supply Ltd.
Burton 100	Economical organoclay	Viscoelastic	Burton Supply Ltd.
Burton 150	Waterfalling organoclay	Viscoelastic	Burton Supply Ltd.
DEX	Waterfalling organoclay	Viscoelastic	Burton Supply Ltd.
Micro of Soda	Sodium carbonate standard MEQ	alkalinity pH control/calcium removal	All

[illegible]

Cem-Break ECA	cellulose, sugar and starch breaker	Polymer Breakers	Consumers United
Cen-Blocker I	Starchin breaker	Polymer Breakers	Consumers United
Cen-C	Synthetic cellulose	Mucosilines	Consumers United
Cen-Fargo	Surface active mixture of oil & gas pipe systems	Surfactant Acetic Anions	Chemical Industries
Cen-Oil	100% oil-soluble drilling fluid	Fluoride Reducers	Gypsum Chemical Works
Cen-Oil HLE	Mud loss control (oil & water) system	Fluoride Reducers	Canamex Limited
Cenzo-Gore B	Retired Oil	Dirt Mud Loss Plugs	Baker Hughes Inteq
Cenzo-Terra H-170	All-oil drilling / drill-in fluid	Systems	Raiser Hughes Inteq
Curbo-Gore B System	Retained oil inverse emulsion	Systems	Baker Hughes Inteq
Carho-TriT System	Mineral nutrient emulsion	Systems	Raiser Hughes Inteq
Cytrag-Gel	Organophilic heterocyclic ether for solids suspension	Viscosifiers	Baker Hughes Inteq
Danno-Mix (218)	Oil mist emulsifier and wetting agent	Emulsifier	Raiser Hughes Inteq
Danco-Mul-HY	High-temperature wetting agent	Emulsifier	Baker Hughes Inteq
Danogard	Water-based mud additive	Thermally Stable Salts	Baker Hughes Inteq
Darco-Lee	Oil mud emulsifier	Fluorine Reducers	Baker Hughes Inteq
DARCO-LIN	Oil mud filtration-reducing agent	Fluorine Reducers	Baker Hughes Inteq
Darco-Trip A-9	Non-aqueous bitumen cement agents for liners	Fluorine Reducers	Baker Hughes Inteq
DARCO-TOL-HI	High-temperature gel additives for improved filtration in liners	Viscosifiers	Baker Hughes Inteq
Dartco-Via	Oxygen-barrier	Weighting Materials	Bingo And Matic
Carbavalis	Calcium carbonate	Filtrate Reducers	Baird
Dal-600	Modified starch	Filtrate Reducers	Baird
Dal-PH	Modified cellulosic polymer	Filtrate Reducers	Baird
Dal-LO	Modified cellulosic polymer	Filtrate Reducers	Baird
Dal-DE	Viscous gum copolymer	Viscosifiers	Baird
Densite Natch	KOH	Aluminum salt control	AI
DENALUC KNOX	NACL	Slurry salt control	AI
DO 750	Liquid clay control (waterless)	Shale Control Inhibitors	ICTC
DC-170	Causticized lignite	Filtrate Reducers	Baird
ODF-100L	Anionic polyacrylamide	Shale Control Inhibitors	Conoco Drilling Fluids
Colox	Sodium carboxymethyl cellulose	Filtrate Reducers	Baird
Delloleaks	Cellulose latex	Lost Circulation Material	AI
Dellathins	Cellulose latex	Lost Circulation Material	AI
Osborn Formula	High density brine	Weighting Materials	Consumers United
OFB-6000	Organic barrier compounds	Thinning Materials	AM O'Brien Specialties
GR-100	Chrome free aqueous emuls	Loss Circulation Material	Gypsum Pacific
GRP-200	Ground compressed cellulose	Loss Circulation Material	Baker Hughes Inteq
Grind-Loss Control	Ground compressed cellulose	Loss Circulation Material	Baker Hughes Inteq

Chem-Loss Plus	High speed cellulose LGM for ES in Invert fluids	Lost Circulation Material	Factor Hughes Inteq
Chembrak EB	Enzyme for breaking polymers	Polymer Breakers	Winn-Arti Fluids
Chembrak GCA	Enzyme blend for polymers and starch	Polymer Breakers	Winn-Arti Fluids
Chembrak H2	Calcium hypochlorite oxidizing agent	Polymer Breakers	Winn-Arti Fluids
Chemcote	Liquid Biocide	Biocides	Canamara United
Chemclean Rtg Wash	Biodegradable detergent/deterger	Surfactant Agents	Canamara United
Chemcote	Foaming agent for water	Foaming Agents	Canamara United
Chemcote K3	Corrosion inhibitor & anti-emulsion breakers	Corrosion Inhibitor	Canamara United
Chemcote	Breakable oil-based fluid	Systems	Argo
Chemcote pH	pH control - chemical system	alkaline/pH control	Canamara United
Chemcote Buff	pH control - chemical system	alkaline/pH control	Canamara United
Chemcote DEM	Defoamer for chemical system	Defoamer	Canamara United
Chemcote Gel	Gelsol-gelant	Viscoifiers	Canamara United
Chemcote 400	Urease inhibitor chemical gel	Viscoifiers	Canamara United
Chemcote Thin	Thinner for chemical system	Thinners, Dispersants	Canamara United
Chemcote UMI	Thinner for oil-based muds	Thinners, Dispersants	Canamara United
Chemcote X	High-temp filtration control agent for water-based fluids	Filtrate Reducers	Factor Hughes Inteq
Chemcote I	Oil mud primary surfactant	Surfactant	Canamara United
Chemcote II	Oil mud secondary surfactant	Surfactant	Canamara United
Chemcote OMI	Oil mud wetting agent	Surfactant	Canamara United
Chemcote CMU	Wetting agent	Surfactant Active Agents	Canamara United
Chemcote FDC	PHPA	Flocculants	Chrom Technologies
Chemcote Alum	Chromia chloride	Commercial Chromegels	Imco/All
Chemcote	Corrosion inhibitor	Corrosion Inhibitor	M.J. SwamyPadana
Chemcote Acid	alkalinity control	alkalinity pH control	AI
Chemcote	Lighted xanthan gum	Viscoifiers	Drilling Specialties Co.
Chemcote	Selective flocculant for Hydro-based system	Flocculants	Sproul
Chemcote	Shale inhibitor for Hydro-based system	Shale Control Inhibitors	Sproul
Chemcote Plus	Amphiphilic material	Shale Control Inhibitors	Sproul
Chemcote	Amphiphilic amine complex	Shale Control Inhibitors	Factor Hughes Inteq
Chemcote	Rtg Wash Cleaner	Surface Active Agents	M.H. Swaco/All
Chemcote	Low foaming surfactant	Low Foam Surfactants	ICFO
Chemcote	Blended polyurethane with carboxylic	Lost Circulation Materials	Milentium Technologies Ltd.
Chemcote K	Hydrolyzable	Shale Control Inhibitors	Milentium Technologies Ltd.
Chemcote	Carboxymethyl cellulose	Filtrate Reducers	AI
Chemcote	PAU LAMBERT	Fluoride	AI
Chemcote	Branch system (1007)	Fluoride	Sun Dine Products

Dosite-Lube	PAO Hygienic	1 Lubricants	Sun Drilling Products
Con-Del	Fluid Desagant	Surface Active Agents	Banded
Concor 401	Phosphorus based corrosion inhibitor	corrosion inhibitor	MJ Superfluid
Concor	All of fluid system	Systems	Esomad
Concor	Corrosion inhibitor/oxidation scavenger	inhibition inhibitor	Conamant Fluids
Concor 600	Highly stable, phosphate fluid material	Loss Of Lubricant Material	paper Hughes Ineq
Concor MEP 420	5 way packer fluid inhibitor	corrosion inhibitor	Dakor Hughes Ineq
CRW 132	5 way packer fluid inhibitor	corrosion inhibitor	Dakor Hughes Ineq
Crysol-641	Demersic shale inhibitor	Shale Control Inhibitors	Marque Fluids
Crysol-642	Fluorine resistant inhibitor	Fluorine Resistant	Alkylamine Solutions
Crysol-643	Fluorine resistant inhibitor	Fluorine Resistant	Emulsifying Agents
Crysol	Sodium Polyacrylate	Emulsifier	AA
DTB Plus	High-temp polymer films control for high-velocity environments	Emulsifier	Concord Drilling Fluids
Dekolite (Kurtel)	Uranium phosphate	Shale Control Inhibitors	Concord Drilling Fluids
Dop	Viscosity inhibitor for pure oil systems	Thinning, Dispersants	Concord Drilling Fluids
D-Sink	Dry Control - pure oil systems	alkalinity, pH control	Concord Drilling Fluids
D-Tuff	pH control - pure oil systems	alkalinity, pH control	Concord Drilling Fluids
D-Control	pH control - pure oil systems	alkalinity, pH control	Concord Drilling Fluids
DD	Drilling Dispersants	Surface Active Agents	MJ Superfluid
Desagant Inhibitor	Agents of polyacrylates and methyl silicates	Shale Control Inhibitors	Marque Drilling Fluids
Desagant 2000	Sulfur based lubricant	Emulsifier	Emulsifying Agents
Desagant-2	Water miscible for polymer systems	Emulsifier	Emulsifying Agents
Desagant-3	Alcohol based lubricant	Emulsifier	Emulsifying Agents
Desagant-4	Alcohol based lubricant	Emulsifier	Emulsifying Agents
Desagant-5	Low viscosity lubricant	Emulsifier	Emulsifying Agents
Desagant-6	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-7	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-8	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-9	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-10	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-11	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-12	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-13	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-14	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-15	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-16	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-17	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-18	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-19	Emulsifier	Emulsifier	Emulsifying Agents
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Desagant-22	Emulsifier	Emulsifier	Emulsifying Agents
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Desagant-40	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-41	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-42	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-43	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-44	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-45	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-46	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-47	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-48	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-49	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-50	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-51	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-52	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-53	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-54	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-55	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-56	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-57	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-58	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-59	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-60	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-61	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-62	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-63	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-64	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-65	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-66	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-67	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-68	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-69	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-70	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-71	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-72	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-73	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-74	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-75	Emulsifier	Emulsifier	Emulsifying Agents
Desagant-76	Emulsifier	Emulsifier	Emulsifying

Oil Bonds	Polymer beads	Lubricants	Federal / Alpine
Oil Seal	Liquid Inkjet	Surface Active Agents	Berlind
Orbison	Viscosity modifiers	Conc'd Drilling Fluids	Conc'd Drilling Fluids
Orbison B	Heavy non-emulsifiable surface agents	Surface Active Agents	SUB LITTING FLUIDS
Orbison DB	Liquid shock inhibitor	Shale Control Inhibitors	Drilling Services Co
Orbison E	Background polymer	Lost Circulation Material	Drilling Products
Orbison	Foaming agent for water	Foaming Agents	Carmanco Union
Orbison MGP		Surface Active Agents	Berlind
Orbison Plug CM	Blended sized golf-ball fiber	Lost Circulation Material	Milchem Technologies Ltd.
Orbison Segment	Drilling treatment liquid/powder	Surface Active Agents	Milchem Technologies Ltd.
Orbison Plus	Amphiphilic cellulose ether	Filtrate Reducers	Carmanco Union
Orbison HV	Fluorinated cellulose	Viscosifiers	Milchem Technologies Ltd.
Orbison LV	Polysiloxane cellulose	Filtrate Reducers	AMCO Spacelabs
Orbison TM	Large-mw organic inhibitor	Thinner Dispersants	AM Drilling Services
Orbison	Non-damaging easy-lose polymer based system	Systems	AMCO Spacelabs
Orbison SSG	Blend of organics	Lubricants	Berlind
Orbison	MW viscosifier	Viscosifiers	MH Swaco/Federal
Orbison RT	High temperature pump	Filtrate Reducers	MH
Orbison	Biodegradable demulsifier	Surface Active Agents	Conc'd Drilling Fluids
Orbison D	Synthetic HTHP polymer	Filtrate Reducers	AMCO Spacelabs
Orbison	Polymeric cellulose	Viscosifiers	AMCO Spacelabs
Orbison Plus	Polymeric cellulose	Viscosifiers	AMCO Spacelabs
Orbison Plus Superior	Polymeric cellulose	Filtrate Reducers	AMCO Spacelabs
Orbison Superior	Polymeric cellulose	Shale Control Inhibitors	AMCO Spacelabs
Orbison Bonds	Polymer beads	Lubricants	Drilling Services Co
Orbison Delamir	Prepolymer oil carrier	Defoamers	AMCO Spacelabs
Orbison	Thinner for pure oil systems	Thinners, Dispersants	Conc'd Drilling Fluids
Orbison	Filtrate Reducers	Filtrate Reducers	MH Swaco/Federal
Orbison	Non-aqueous, dispersible, non-clotted	Viscosifiers	MH Swaco/Federal
Orbison H	Organophilic solid powder	Filtrate Reducers	Berlind
Orbison Plus	High-temp. ultra-fine co-polymer	Filtrate Reducers	Berlind
Orbison	Viscosifier - mix of systems	Viscosifiers	Conc'd Drilling Fluids
Orbison	Drilling fluid detergent	Surface Active Agents	Hamrock Drilling Fluids
Orbison	Cellulose fiber	Lost Circulation Material	Newark Drilling Fluids
Orbison	Ground natural fiber	Lost Circulation Material	Drilling Services Co
Orbison 317	Polypropylene fiber	Shale Control Inhibitors	National Slurries
Orbison B	Easy base fluid	Drill Mud Base Fluids	MH Swaco/Federal

Ecogreen P	Primary emulsifier for Ecogreen system	emulsifier	M-I Swagco Federal
Ecogreen S	Secondary emulsifier for Ecogreen system	emulsifier	M-I Swagco Federal
Ecocool	Polymeric triple reducer	Thiurea Reducers	M-I Swagco Federal
EM 2000 Degreaser	Ultrasonic cleaner	Surface Active Agents	Sun Drilling Products
EM-A-Solids	Emulsion breaker	Surface Active Agents	Continental United
EM-UGO	Crack leak treatment	Emulsifier	Brine-Add Fluids
Encapsulator	Liquid polyacrylamide	Flocculants	Copmings Lquid
Enviguard	Liquid polyacrylamide	Flocculants	SA-Chem Supply Ltd.
Envipass-800	Liquid polyacrylamide	Flocculants	Continental United
Enviro-Mix	Low toxicity SHC mineral oil	Drill Mnt Fluids	ICTC
Enviro-Mix	Inorganic biodegradable flocculant	Flocculants	Asahi Hyaku
Enviro-Mix	Amine Salt	Weld Stabilizer	Uniflow
Enviro-Mix	Sized bentonite	Lost Circulation Material	Continental United
Enviro-Mix	Crystalline oil base hydraulic fluids	Lubricants	Baroid
Enviro-Mix	Non-toxic lubricant	Thermally Stable Lubricants	Baroid
Enviro-Mix	Crystalline oil base	Lubricants	Baroid
Enviro-Mix	Peptized Wyoming bentonite	Systems	M-I Swagco Federal
Enviro-Mix	Non-foaming vegetable oil blend	Viscosifiers	Continental United
Enviro-Mix	Oil-soluble surfactant liquid non-foam	Emulsifier	SA-Chem Supply Ltd.
Enviro-Mix	In situ fluid emulsifier	Emulsifier	Baroid
Enviro-Mix	Liquid lubricant	Lubricants	Sun Drilling Products
Enviro-Mix	Liquid lubricant	Lubricants	Sun Drilling Products
Enviro-Mix	Liquid lubricant	Lubricants	Sun Drilling Products
Enviro-Mix	Blend of surfactants	Lubricants	Sun Drilling Products
Enviro-Mix	Polyacrylamide polyacrylate	Grout Control Inhibitors	Baroid
Enviro-Mix	Superplasticizing polyacrylamide	Grout Control Inhibitors	Baroid
Enviro-Mix	Acid soluble blend of LCM	Lost Circulation Material	Baroid
Enviro-Mix	Blend of surfactants, lubricants and viscosifiers	Lubricants	Baroid
Enviro-Mix	In situ polyacrylamide	Grout Control Inhibitors	Phyllis & Guller
Enviro-Mix	Emulsifier for P&H system	Emulsifier	M-I Swagco Federal
Enviro-Mix	Superplasticizing Invert emulsion mud	Systems	M-I Swagco Federal
Enviro-Mix	Polymeric oil-soluble	Viscosifiers	Federal Wholesale
Enviro-Mix	Polymeric oil-soluble	Viscosifiers	Federal Wholesale
Enviro-Mix	Acrylic acid	Washing Materials	Federal Wholesale
Enviro-Mix	Sodium methacrylate	Viscosifiers	Federal Wholesale

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ES Liquid PMPA	Liquid polyacrylamide	Fluorocarbon	Require Solvents
IX Brine	Ammonium humate	Brake Control Inhibitors	DMK Drilling Fluids Ltd
IX Mud I	Primary emulsifier	Emulsifier	DMK Drilling Fluids Ltd
IX Mud II	Secondary emulsifier	Emulsifier	DMK Drilling Fluids Ltd
IX Oil Sands	Oil soluble surfactant scavenger	Corrosion Inhibitor	DMK Drilling Fluids Ltd
IX T20	Blends of polymers	Viscoelastic	DMK Drilling Fluids Ltd
IX S-200	Water soluble surfactant scavenger	Corrosion Inhibitor	DMK Drilling Fluids Ltd
IX T10	Emulsifier	Thickeners, Dispersants	DMK Drilling Fluids Ltd
Colone	Lead sulphide powder	Weighting Materials	AP
Gal	Sodium mordenite/clay in kieselguhr	Viscoelastic	AI
Geon	Bentonite extender	Viscoelastic	M-I Swaco/Federal
Gelphig II	Oil mud gelling agent	Viscoelastic	Paragon
Gelone IV	Polymer treated organophilic clay	Viscoelastic	Baroid
Gelone V	Amine treated organophilic clay	Viscoelastic	Baroid
Gowat XT	HT stable biopolymer	Viscoelastic	AI
Greoline	Natural bitumen	Shale Control Inhibitors	AUKAS Oilfield Group
Greoline HT	Natural bitumen pulverized	Filter Cake Reducers	AI
Gleat Dams	Steel shot bricks	Lubricants	Canamex United
High Graph X001	Resistant spherical graphite inert	Lubricants	Canamex United
Glycil	Polyacrylate glycol	Shale Control Inhibitors	M-I Swaco/Federal
Ion Drill II	Provides Lubr for AHA-EPDM OGS system	Viscoelastic	M-I Swaco/Federal
Graphite Pumps	Graphite	Lubricants	M-I Swaco/Federal
Greentide	Hemul G-1000	Bactericides	Canamex United
G-Sud	Starchite Dispersant agent	Lost Circulation Material	M-I Swaco/Federal
Gummin K200	Liquid shale inhibitor	Shale Control Inhibitors	Gun Drilling Products
Gyrolite	Calcium sulphate	Viscoelastic	AI
H-20	Hydroxyethyl cellulose	Surfactant Active Agents	AI
M.M.C. Charge	Nylonene surfactant	Surfactant Active Agents	Canamex United
Hibrol	Modified cellulose polymer	Brake Control Inhibitors	M-I Swaco/Federal
High Permea	Amino	Corrosion Inhibitor	Hymanic Drilling Fluids
Hico gel G	Oil-soluble HSB scavenger	Corrosion Inhibitor	AI
130MPV	Liquid HSB scavenger	Thickeners, Dispersants	Hymanic Drilling Fluids
Humula	Lignite	Viscoelastic	Canamex United
Hydrogel	Water-soluble Carbopol	Systems	AI
Hydroguard	High performance wpm	Lost Circulation Material	Baroid
Hydro-Pup	Forming LCM for mudlog or slurrymud formations	Shale Control Inhibitors	Canamex United
Hydrofill Adress	Liquid HAN anionic polyacrylamide		

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Imco Fine	Fluorinated agent	Fluorinated	Imco
Imco F-Gel-Aer	Surface active dispersing agent	dispersing	Imco
Imco Fine-Aer	Oil soluble surfactants	Lubricants	Imco
Imco F-100	Fluorinated	Loss Circulation Material	Imco
Imco Gel	Bitumens	Viscosity	Imco
Imco Gel-Aer	Benign/Air-Blender	Viscosity	Imco
Imco H-Gel-Aer	Water dispersible phosphate	Viscosity	Imco
Imco H-100	Benign/Air-Blender	Viscosity	Imco
Imco K-Gel-Aer	Viscosity & geling agents	Viscosity	Imco
Imco K-Gel-Aer	Thick emulsion system	Systems	Imco
Imco K-Gel-Aer	Primary emulsifier	emulsifier	Imco
Imco K-Gel-Aer	Calcium salts	Stress Control Inhibitors	Imco
Imco K-Gel-Aer	Specialty modified dispersed fatty acid emulsions	emulsifier	Imco
Imco K-Gel-Aer	Grinding of base fluid	Systems	Imco
Imco K-Gel-Aer	Oil base mud	Systems	Imco
Imco K-Gel-Aer	Emulsion stabilizer	emulsifier	Imco
Imco K-Gel-Aer	Emulsion stabilizer	emulsifier	Imco
Imco K-Gel-Aer	High temperature stabilizer	Thermally Stable agents	Imco
Imco K-Gel-Aer	Thick emulsion system	Systems	Imco
Imco K-Gel-Aer	Sub-bitumens	Viscosity	Imco
Imco K-Gel-Aer	Combination of dispersants and fibrous materials	Loss Circulation Material	Imco
Imco K-Gel-Aer	Mixed agents	Thermally Stable agents	Imco
Imco K-Gel-Aer	Hydrophobic starch	Fibrous Products	Imco
Imco K-Gel-Aer	Organic emulsion stabilizer with emulsions	Lubricants	Imco
Imco K-Gel-Aer	Dispersant	Lubricants	Imco
Imco K-Gel-Aer	Oil dispersible phosphate	Lubricants	Imco
Imco K-Gel-Aer	Grinding MCA	Loss Circulation Material	Imco
Imco K-Gel-Aer	Low cost heavy emulsion system	Systems	Imco
Imco K-Gel-Aer	Sodium triphosphate	Thermally Stable agents	Imco
Imco K-Gel-Aer	Wettable salts	Loss Circulation Material	Imco
Imco K-Gel-Aer	Paraffin/ethylene	Viscosity	Imco
Imco K-Gel-Aer	Flaming agent	emulsion stabilizer	Imco
Imco K-Gel-Aer	Unbreakable compound	Thermally Stable agents	Imco
Imco K-Gel-Aer	Blended ion exchange blend	Thermally Stable agents	Imco
Imco K-Gel-Aer	Stress control system	Stress control products	Imco
Imco K-Gel-Aer	Blend of fatty acids, surfactants & ashless materials	Lubricants	Imco

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MF-100	Low mol. wt. additive	Fluorolene	Marquis Fluids
MF-200		Lubricants	Marquis Fluids
MF-300	Alg. equipment cleaner	Surface Active Agents	Marquis Fluids
MF-400	Reserve flocculant	Foodstuffs	ALVACOR Mixed Group
MF-500	Primary emulsifier	Emulsifier	Marquis Fluids
MF-600	Aluminum hydroxide	Shale Drilling Inhibitor	ALVACOR Mixed Group
MF-700	Oil sealing wax	Emulsifier	Marquis Fluids
MF-800	Oil welling agent	Surface Active Agents	Marquis Fluids
MF-900	Alg. component protector	Corrosion inhibitor	Marquis Fluids
MF-A	Aluminum pump	Viscoesters	Marquis Fluids
MF-B	Grease	Vegetarian Macerates	Marquis Fluids
MF-C	Shredded paper fiber	Local Circulation Material	MF-Special
MF-D	Worming benzamide	Vegetarian	MF-Special
MF-E	Unbleached wood pulp benzoate	Vegetarian	MF-Special
MF-F	General purpose flocculant	Vegetarian	MF-Special
MF-G	W.M.I. resins of vulcan formations	Local Circulation Material	MF-Special
MF-H	Blood mica flake	Local Circulation Material	MF-Special
MF-I	Moist heat	Local Circulation Material	MF-Special
MF-J	Emulsified thermally denatured fluid	Systems	Emul
MF-K	Grease	Wolfgang Acetates	Wolgang
MF-L	Sized ground carbonates	Wolfgang Materials	Baker Hughes Inteq
MF-M	Multiple point air vents of ground carbonate	Local Circulation Material	Baker Hughes Inteq
MF-N	Water soluble, biodegradable, deterpenomash	Local Circulation Material	Baker Hughes Inteq
MF-O	Co-polymer	Surface Active Agents	Baker Hughes Inteq
MF-P	Vegetable oil based emulsifier fluid	Fluorolene	Baker Hughes Inteq
MF-Q	Sulphide copolymer + zinc carbonate	Vegetarian	Baker Hughes Inteq
MF-R	Clayed zinc carbonate	Vegetarian	Baker Hughes Inteq
MF-S	Worming benzoate	Vegetarian	Baker Hughes Inteq
MF-T	Unbleached wood pulp benzoate	Vegetarian	Baker Hughes Inteq
MF-U	Dispersible polymer flocculant	Foodstuffs	Baker Hughes Inteq
MF-V	Vegetarian oil lubricant	Lubricants	Marquis Fluids
MF-W	Non-solvents thin flake	Local Circulation Material	Marquis Fluids
MF-X	Polymers of carbonates	Fluorolene	Baker Hughes Inteq
MF-Y	Low viscosity polymer emulsions	Fluorolene	Baker Hughes Inteq
MF-Z	Ground material	Local Circulation Material	Baker Hughes Inteq
MF-AA	Blended LCM available in three grind sizes	Local Circulation Material	Baker Hughes Inteq

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Ultrash	Shale Inhibitor	Shale Control Inhibitors	MH Swaco/Federal
Ultracut	Chromium Inhibitor	Thinning, Dispersants	S&W Huls/Inley
Ultracut 2	Chrome-Free Inhibitor	Thinning, Dispersants	S&W Huls/Inley
Ultracut 3	Synthetic Sulfonate Blend	Thinning, Dispersants	Behr/Hughes Inley
Ultracut 4	Polymeric Cellulose	Thinning, Dispersants	Concord Drilling Fluids
Ultracut 5	Modified starch	Various	Various
Ultracut 6	Backbone polymethacrylate	Filtrate Reducers	MH Swaco/Federal
Ultracut 7	Modified Cellulose	Oil-soluble emulsifier	Midway Alliance
Ultracut 8	Mineral oil based ODM	Local Circulation Material	Midway Alliance
Ultracut 9	Low viscosity water base rate	Systems	Midway Alliance
Ultracut 10	Blended emulsifier and geling agent	Oil-soluble emulsifier	MH Swaco/Federal
Ultracut 11	High calcium chloride rate	Systems	MH Swaco/Federal
Ultracut 12	Diethyl & dimethyl salts	Drill Mud Rate Fluids	MH Swaco/Federal
Ultracut 13	Liquid viscosifier & breaker for oil muds	Various	MH Swaco/Federal
Ultracut 14	Modified lignite	Filtrate Reducers	MH Swaco/Federal
Ultracut 15	Emulsifier for high solids content fluids	Emulsifier	MH Swaco/Federal
Ultracut 16	Viscosity modifier	Emulsifier	MH Swaco/Federal
Ultracut 17	Low shear rate modifier for oil muds	Viscosifiers	MH Swaco/Federal
Ultracut 18	Mineral oil emulsifier	Emulsifier	MH Swaco/Federal
Ultracut 19	Thermally stable base organic thixotropic	Viscosifiers	MH Swaco/Federal
Ultracut 20	Primary emulsifier for Viscomap system	Emulsifier	MH Swaco/Federal
Ultracut 21	Oil mud dispersant	Emulsifier	MH Swaco/Federal
Ultracut 22	Nature's covering agent	Thinning, Dispersants	MH Swaco/Federal
Ultracut 23	Oil wetting agent for oil muds	Filtrate Reducers	MH Swaco/Federal
Ultracut 24	Welding agent	Emulsifier	MH Swaco/Federal
Ultracut 25	Organophilic clay	Sulfate Active Agents	MH Swaco/Federal
Ultracut 26	Organophilic clay	Viscosifiers	MH Swaco/Federal
Ultracut 27	Viscosity modifier	Viscosifiers	MH Swaco/Federal
Ultracut 28	Thixotropic viscopolymer blend	Viscosifiers	MH Swaco/Federal
Ultracut 29	Thixotropic viscopolymer blend	Viscosifiers	MH Swaco/Federal
Ultracut 30	Resin	Viscosifiers	MH Swaco/Federal
Ultracut 31	Alcohol based defoamer	Defoamer	MH Swaco/Federal
Ultracut 32	Ground VSMU shells	Local Circulation Material	MH Swaco/Federal
Ultracut 33	Polymer microbicide foam system	Systems	MH Swaco/Federal
Ultracut 34	Sizes for gel activity and fluid loss control	Weighting Materials	MH Swaco/Federal
Ultracut 35	Extreme breaker with biocide	Polymer Breakers	MH Swaco/Federal
Ultracut 36	Extreme breaker without biocide	Polymer Breakers	MH Swaco/Federal
Ultracut 37	Polysilane base	Local Circulation Material	MH Swaco/Federal

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Zinc Carbide	Sulphide scavenger	Carbon monoxide	Al
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## MATERIAL SAFETY DATA SHEET

#1700, 407 2<sup>ND</sup> STREET S.W., CALGARY, ALBERTA T2P 2Y3  
 TELEPHONE: (403) 268-2242 FAX: (403) 268-2251  
 1-613-996-6666 - CANUTEC - Transportation Emergency  
 1-888-243-9771 - ChExSS - Chemical Exposure

### KIM MUD

#### SECTION I: IDENTIFICATION OF PRODUCT

Product Name: KIM MUD  
 Chemical Family: Blend of polyeaccharide  
 polymers, calcium carbonate, calcium lignosulfonate.  
 WHMIS Classification: Not controlled  
 Workplace Hazard: Not applicable

Product Use: Viscosifier  
 TDG Classification: Not regulated  
 Packaging Group: Not applicable  
 PIN: Not applicable

#### SECTION II: HAZARDOUS INGREDIENTS

Ingredients	Percent	CAS Number None	LD <sub>50</sub> (Species/Route)	LC <sub>50</sub> (Species/Route)

#### SECTION III: TOXICOLOGICAL PROPERTIES

Route of entry: ☐ Skin ☐ Eye Contact ☐ Inhalation ☐ Ingestion

Effects of acute exposure: Treat as nuisance dust. May cause mechanical irritation to the skin, eyes, and respiratory tract.

Effects of chronic exposure: No effects expected

Exposure limits: Not applicable

Irritancy of product: Irritant to skin, eyes and respiratory tract.

Sensitization to product: Not determined

Carcinogenicity: Not determined

Reproductive toxicity: Not determined

Teratogenicity: Not determined

Mutagenicity: Not determined

Name of toxicological synergistic products: Not determined

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**KIM MUD**

#### **SECTION IV: FIRST AID MEASURES**

**Skin contact:** Wash skin for 5 minutes with soap and water. If irritation develops or persists seek medical attention.

**Eye contact:** Rinse eyes with water for 15 minutes. If irritation develops or persists seek medical attention.

**Inhalation:** Remove to fresh air. If not breathing, administer CPR. Seek medical attention.

**Ingestion:** Give victim 1-2 glasses of water. Do not induce vomiting. Seek medical attention.

#### **SECTION V: PHYSICAL DATA**

**Physical state:** Solid.

**Appearance and odour:** Dry Tan Powder. Odorless

**Odour threshold:** Not applicable

**Specific gravity (°C):** 1.85

**Vapor pressure (mmHG):** Not applicable

**Vapor density (Air=1):** Not applicable

**Evaporation rate:** Not applicable

**Boiling point (°C):** Not determined

**Freeze/Melting point (°C):** Not determined

**pH (%):** 7.5 (2.0% Slurry)

**Co-efficient of water/oil distribution:** Not applicable

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**KIM MUD**

#### **SECTION VI: FIRE AND EXPLOSION DATA**

Conditions of flammability: Not applicable

Means of extinguishing: Water, Water fog, Foam, chemical and CO2

Flash point: Not applicable

Upper flammable limit: Not applicable

Lower flammable limit: Not applicable

Auto-ignition temperature: Not applicable

Hazardous combustion products: Not applicable

Explosion data-sensitivity to mechanical impact: Not applicable

Explosion data-sensitivity to static discharge: Not applicable

#### **SECTION VII: REACTIVITY DATA**

Chemically unstable (conditions): Stable.

Product incompatible with: Strong Acids and Oxidizing Agents.

Conditions of reactivity: Not known

Hazardous decomposition products: COx

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**KIM MUD**

### **SECTION VIII: PREVENTATIVE MEASURES**

**Personal protective equipment:** Suggest NIOSH approved dust mask; nuisance dust. Suggest chemical resistant gloves and safety glasses.

**Specific engineering controls:** General mechanical ventilation.

**Procedures for leak/spills:** Vacuum or sweep-up if dry. If wet, pick up with dry material such as sand or dirt. Avoid flushing with water as material may become extremely slippery.

**Waste disposal:** Dispose of material in accordance with local ordinances. Landfill is suggested.

**Handling procedures and equipment:** Avoid ingestion. Practice reasonable caution and personal cleanliness. Avoid skin and eye contact.

**Storage requirements:** Not applicable

**Special shipping information:** Not applicable

### **SECTION IX: PREPARATION**

**Date updated:** March 28, 2007

**Prepared by:** Product Safety Committee

All the recommendations and suggestions herein concerning this product are based upon tests and data believed to be reliable, however it is the user's responsibility to determine the safety, toxicity and sustainability for their own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Q'Max Solutions Inc. as to the effects of such use, the results to be obtained, or the safety and toxicity of the product nor does Q'Max Solutions Inc. assume any liability arising out of use by others. Nor is the information herein to be considered as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

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## MATERIAL SAFETY DATA SHEET

#1700, 407 2<sup>ND</sup> STREET S.W., CALGARY, ALBERTA T2P 2Y3  
 TELEPHONE: (403) 269-2242 FAX: (403) 269-2251  
 1-613-996-6666 - CANUTEC - Transportation Emergency  
 1-888-243-9771 - CHEMSS - Chemical Exposure

### Q'CLEAN

#### SECTION I: IDENTIFICATION OF PRODUCT

Product Name: Q'CLEAN  
 Chemical Family: Petroleum Hydrocarbons  
 WHMIS Classification: B3;D1B,D2B  
 Workplace Hazard: Combustible liquid, poisonous  
 Material

Product Use: Oil mud product  
 TDG Classification: Not applicable  
 Packaging Group: Not applicable  
 PIN: Not applicable

#### SECTION II: HAZARDOUS INGREDIENTS

Ingredients	Percent	CAS Number	LD <sub>50</sub> (Rat/Oral)	LC <sub>50</sub> (Rat/Inh)
Mixture of Petroleum Hydrocarbons	100	64741-44-2	>5 g/kg	1.72 mg/L 4 hrs.

#### SECTION III: TOXICOLOGICAL PROPERTIES

Route of entry: ☒ Skin ☒ Eye Contact ☒ Inhalation ☒ Ingestion

Effects of acute exposure: Not applicable

Effects of chronic exposure: Not applicable

Exposure limits: Not applicable

Irritancy of product: Irritation, defatting and drying of skin. Prolonged exposure to skin may cause chapping, cracking or possibly dermatitis. May cause irritation, but not permanent damage. Inhalation of vapors or mist will cause headaches, nausea, dizziness and intoxication; severe central nervous system depression.

Sensitization to product: Not available

Carcinogenicity: Not available

Reproductive toxicity: Not available

Teratogenicity: Not available

Mutagenicity: Not available

Name of toxicological synergistic products: Not available

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1 OF 1



**Q'CLEAN**

#### **SECTION IV: FIRST AID MEASURES**

**Skin contact:** Remove contaminated clothing – launder before re-use. Wash with soap and water. Discard saturated leather articles.

**Eye contact:** Copious warm water flush – 15 minutes. Physician assessment mandatory.

**Inhalation:** Evacuate to fresh air. Apply cardio-pulmonary resuscitation if required. Administer oxygen if available. If resuscitation is required, physician assessment mandatory.

**Ingestion:** DO NOT INDUCE VOMITTING. If vomiting – take care to prevent aspiration. Give 250 ml (½ pint) of milk to drink. Liquid paraffin may slow gastric absorption. Give activated charcoal tablets only if prescribed by physician. Physician assessment mandatory.

#### **SECTION V: PHYSICAL DATA**

**Physical state:** Liquid

**Appearance and odour:** Clear and colorless hydrocarbon odour.

**Odour threshold:** Not applicable

**Specific gravity:** 0.90

**Vapor pressure (mmHG):** <1 kPa

**Vapor density (Air=1):** 4.5 (approximately)

**Evaporation rate:** Not applicable

**Boiling point (°C):** 204 - 371°C (approximately)

**Freeze/Melting point (°C):** Not applicable

**pH:** Not applicable

**Co-efficient of water/oil distribution:** Insoluble

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**Q'CLEAN**

#### **SECTION VI: FIRE AND EXPLOSION DATA**

**Conditions of flammability:** Will not occur under normal conditions. Treat as flammable liquid.

**Means of extinguishing:** Foam, dry chemical, water spray, carbon dioxide for small fires. Do not cut, drill or weld empty containers.

**Flash point:** 94°C

**Upper flammable limit:** 6% by volume

**Lower flammable limit:** 0.7% by volume

**Auto-ignition temperature:** >225°C

**Hazardous combustion products:** CO<sub>2</sub>, SO<sub>2</sub>, smoke.

**Explosion data-sensitivity to mechanical impact:** Not applicable

**Explosion data-sensitivity to static discharge:** Not applicable

#### **SECTION VII: REACTIVITY DATA**

**Chemically unstable (conditions):** Stable.

**Product incompatible with:** Strong oxidizing agents (strong acids, peroxides, and chlorine)

**Conditions of reactivity:** Excessive heat, sources of ignition, formation of oil mist.

**Hazardous decomposition products:** CO<sub>2</sub>, SO<sub>2</sub>, smoke on combustion.

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**Q'CLEAN**

## SECTION VIII: PREVENTATIVE MEASURES

**Personal protective equipment:** Up to 5 mg/m<sup>3</sup> (oil mist) none required. From 5 to 50 mg/m<sup>3</sup>, use an approved organic vapor respirator suitable for oil mist in areas with sufficient oxygen. Above 50 mg/m<sup>3</sup>, use full-face air-supplied or self-contained breathing apparatus. Chemical goggles if splashing is likely. Nitrile, Viton Chemical resistant clothing, if direct contact with liquid likely. **DO NOT USE NATURAL RUBBER or PVC (Polyvinyl chloride)**

**Specific engineering controls:** General ventilation. Use explosion-proof mechanical ventilation suitable for group D atmosphere.

**Procedures for leak/spills:** Avoid contact. Use full protective equipment and breathing apparatus. **ELIMINATE IGNITION SOURCES.** Contain spill. Absorb with inert absorbent such as dry clay, sand or diatomaceous earth, commercial sorbents, or recover using electrically grounded explosion-proof pumps. Place absorbent in closed metal containers. **DO NOT FLUSH TO SEWER.**

**Waste disposal:** Incinerate at licensed waste reclaimer facility.

**Handling procedures and equipment:** **AVOID SKIN CONTACT and INHALATION.** Practice good personal hygiene. **DO NOT SIPHON BY MOUTH OR USE AS A CLEANING SOLVENT.** Launder work clothes frequently. Allowable exposure of 5 mg/m<sup>3</sup> (oil mist) when handling.

**Storage requirements:** Store in cool, well-ventilated area. Electrically ground/bond during the pumping or transfer to avoid static accumulation.

**Special shipping information:** Not applicable

## SECTION IX: PREPARATION

Date updated: January 1, 2005

Prepared by: Product Safety Committee

All the recommendations and suggestions herein concerning this product are based upon tests and data believed to be reliable, however it is the user's responsibility to determine the safety, toxicity and sustainability for their own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Q'Max Solutions Inc. as to the effects of such use, the results to be obtained, or the safety and toxicity of the product nor does Q'Max Solutions Inc. assume any liability arising out of use by others. Nor is the information herein to be considered as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

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## MATERIAL SAFETY DATA SHEET

#1700, 407 2<sup>ND</sup> STREET S.W., CALGARY, ALBERTA T2P 2Y3  
 TELEPHONE: (403) 269-2242 FAX: (403) 269-2251  
 1-613-996-6666 - CANUTEC - Transportation Emergency  
 1-888-243-9771 - ChExSS - Chemical Exposure

### STABLE K

#### SECTION I: IDENTIFICATION OF PRODUCT

Product Name: STABLE K  
 Chemical Family: Amines  
 WHMIS Classification: D-2B  
 Workplace Hazard: Skin and eye irritant

Product Use: Shale stabilizer  
 TDG Classification: Not applicable  
 Packaging Group: Not applicable  
 PIN: Not applicable

#### SECTION II: HAZARDOUS INGREDIENTS

Ingredients	Percent	CAS Number	LD <sub>50</sub> (Species/Route)	LC <sub>50</sub> (Rat/Inh)
Organic Amine	30-60	124-09-4		1400-2800 mg/kg

#### SECTION III: TOXICOLOGICAL PROPERTIES

Route of entry: ☐ Skin ☒ Eye Contact ☒ Inhalation ☒ Ingestion

Effects of acute exposure: May cause slight irritation and/or redness, respiratory irritation, nausea and vomiting

Effects of chronic exposure: Prolonged exposure with skin may cause burning

Exposure limits: Not applicable

Irritancy of product: Irritation of respiratory tract irritation on skin develops slowly after contact. Eye irritation develops immediately upon contact. Ingestion of liquid may cause gastrointestinal distress, irritation and possibly nausea with vomiting

Sensitization to product: Not known as a sensitizer

Carcinogenicity: Not considered to be a carcinogen

Reproductive toxicity: None known

Teratogenicity: Not known as a teratogen

Mutagenicity: Not known as a mutagen

Name of toxicological synergistic products: None known

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## STABLE K

### SECTION IV: FIRST AID MEASURES

**Skin contact:** Wash thoroughly with soap and water

**Eye contact:** Flush immediately with plenty of water for at least 15 minutes. Get emergency medical aid.

**Inhalation:** Remove victim to fresh air, and if needed give oxygen if breathing is labored. Get emergency medical aid.

**Ingestion:** Do not induce vomiting. Give 2-4 glasses of water to drink

### SECTION V: PHYSICAL DATA

**Physical state:** Liquid.

**Appearance and odour:** Liquid, clear solution, odourless

**Odour threshold:** Not available

**Specific gravity:** 1.06

**Vapor pressure (mmHG):** Not available

**Vapor density (Air=1):** Not determined

**Evaporation rate:** Not available

**Boiling point (°C):** >100

**Freeze/Melting point (°C):** Not applicable

**pH:** 9-10

**Co-efficient of water/oil distribution:** Not applicable

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**STABLE K**

### **SECTION VI: FIRE AND EXPLOSION DATA**

**Conditions of flammability:** Does not burn or support combustion.

**Means of extinguishing:** Dry chemical, carbon dioxide, water

**Flash point:** >100 °C

**Upper flammable limit:** Not applicable

**Lower flammable limits:** Not applicable

**Auto-ignition temperature:** Not applicable

**Hazardous combustion products:** CO, CO<sub>2</sub>, oxides of nitrogen

**Explosion data-sensitivity to mechanical impacts:** Not known

**Explosion data-sensitivity to static discharge:** Not known

### **SECTION VII: REACTIVITY DATA**

**Chemically unstable (conditions):** Stable.

**Product incompatible with:** Strong oxidizing agents

**Conditions of reactivity:** None known

**Hazardous decomposition products:** Smoke, carbon dioxide, carbon monoxide and oxides of nitrogen are produced from fire

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**STABLE K**

### **SECTION VIII: PREVENTATIVE MEASURES**

**Personal protective equipment:** Use chemical goggles or full face shield. Chemical resistant gloves. Use of an organic vapour type respirator is advised.

**Specific engineering controls:** Local exhaust in enclosed areas

**Procedures for leak/spills:** Small spills, pick up with absorbent material. Large spills, contain with dikes, pick up with vacuum truck.

**Waste disposal:** Follow applicable local, provincial, federal regulations.

**Handling procedures and equipment:** Avoid ingestion. Practice reasonable caution and personal cleanliness. Avoid skin and eye contact.

**Storage requirements:** Store in a cool, dry, well ventilated place. Keep container tightly closed and away from incompatible materials

**Special shipping information:** Not applicable

### **SECTION IX: PREPARATION**

**Date updated:** April 01, 2005

**Prepared by:** Product Safety Committee

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## MATERIAL SAFETY DATA SHEET

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 TELEPHONE: (403) 269-2242 FAX: (403) 260-2261  
 1-613-996-6666 - CANUTEC - Transportation Emergency  
 1-888-243-9771 - ChExSS - Chemical Exposure

### STARPAK DP

#### SECTION I: IDENTIFICATION OF PRODUCT

Product Name: STARPAK DP  
 Chemical Family: Modified starch  
 WHMIS Classification: Not applicable  
 Workplace Hazard: Not applicable

Product Use: Fluid loss reducer  
 TDG Classification: Not applicable  
 Packaging Group: Not applicable  
 PIN: Not applicable

#### SECTION II: HAZARDOUS INGREDIENTS

Ingredients	Percent	CAS Number	LD <sub>50</sub> (Species/Route)	LC <sub>50</sub> (Species/Route)
None				

#### SECTION III: TOXICOLOGICAL PROPERTIES

Route of entry: ☒ Skin ☒ Eye Contact ☒ Inhalation ☒ Ingestion

Effects of acute exposure: May cause mechanical irritation of the eye. Will irritate gastrointestinal tract and respiratory tract.

Effects of chronic exposure: Not applicable

Exposure limits: Not applicable

Irritancy of product: May cause some minor irritation due to dust drying skin, minor irritation to the eyes, gastrointestinal tract irritation. May be irritating to mucous membranes of nose, throat and upper respiratory tract.

Sensitization to product: No information available

Carcinogenicity: No information available

Reproductive toxicity: No information available

Teratogenicity: No information available

Mutagenicity: No information available

Name of toxicological synergistic products: Not applicable

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## STARPAK DP

### SECTION IV: FIRST AID MEASURES

**Skin contact:** Wash affected area with soap and water.

**Eye contact:** Flush eyes with water for 15 minutes and seek medical attention.

**Inhalation:** Remove patient to fresh air.

**Ingestion:** Dilute by drinking large quantities of water and seek medical attention.

### SECTION V: PHYSICAL DATA

**Physical state:** Solid.

**Appearance and odour:** Solid off-white powder; starchy odour

**Odour threshold:** Not applicable

**Specific gravity:** Not applicable

**Vapor pressure (mmHG):** Not applicable

**Vapor density (Air=1):** Not applicable

**Evaporation rate:** Not applicable

**Boiling point (°C):** Not applicable

**Freeze/Melting point (°C):** Not applicable

**pH:** 9.0-9.5

**Co-efficient of water/oil distribution:** 100% soluble in water.

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100%



## STARPAK DP

### SECTION VI: FIRE AND EXPLOSION DATA

Conditions of flammability: Dust and air mixture may be explosive.

Means of extinguishing: Use media suitable for packaging and surrounding fire.

Flash point: Not applicable

Upper flammable limit: Not applicable

Lower flammable limit: Not applicable

Auto-ignition temperature: Not applicable

Hazardous combustion products: Not applicable

Explosion data-sensitivity to mechanical impact: Not applicable

Explosion data-sensitivity to static discharge: Not applicable

### SECTION VII: REACTIVITY DATA

Chemically unstable (conditions): Stable

Product incompatible with: Strong oxidizing agents.

Conditions of reactivity: Not applicable

Hazardous decomposition products: Oxides of carbon

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## STARPAK DP

### SECTION VII: PREVENTATIVE MEASURES

**Personal protective equipment:** Use an NIOSH approved dust filter. Suggest plastic or rubber. Suggest the use of goggles when handling.

**Specific engineering controls:** Local exhaust ventilation is recommended for control of dust.

**Procedures for leak/spills:** Use appropriate safety equipment. Avoid all bodily contact with spilled material. Small spills, sweep up and either recover to dispose in approved containers. Large spills, shovel and sweep up for reclamation or disposal. It is suggested that recovered material be reclaimed for reuse. Do not allow material to enter storm sewers or storm water inlets.

**Waste disposal:** Dispose to conform with local disposal regulations. It is the responsibility of the user of this product to determine at the time of disposal whether the product meets criteria for hazardous waste. This product lends itself to recovering for reclamation if spilled.

**Handling procedures and equipment:** Avoid ingestion. Do not breathe the dust. Wash thoroughly after handling. Practice reasonable caution and personal cleanliness. Launder exposed clothing before reuse. Avoid practices which produce dust.

**Storage requirements:** Store away from sources of ignition. Store in dry well ventilated place. Avoid damp or wet conditions that could lead to spoilage.

**Special shipping information:** Not applicable

### SECTION IX: PREPARATION

Date updated: April 01, 2005

Prepared by: Product Safety Committee

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## MATERIAL SAFETY DATA SHEET

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 TELEPHONE: (403) 269-2242 FAX: (403) 269-2251  
 1-613-996-6666 - CANUTEC - Transportation Emergency  
 1-888-243-9771 - CHEXSS - Chemical Exposure

### KELZAN XCD

#### SECTION I: IDENTIFICATION OF PRODUCT

Product Name: KELZAN XCD  
 Chemical Family: Polysaccharide gum  
 WHMIS Classification: Not applicable  
 Workplace Hazard: Not applicable

Product Use: Viscosifier  
 TDG Classification: Not applicable  
 Packaging Group: Not applicable  
 PIN: Not applicable

#### SECTION II: HAZARDOUS INGREDIENTS

Ingredients	Percent	CAS Number	LD <sub>50</sub> (Rat/Oral)	LC <sub>50</sub> (Species/Route)
Xanthan gum	-	11138-66-2	>5000 mg/kg	-

#### SECTION III: TOXICOLOGICAL PROPERTIES

Route of entry: ☒ Skin ☒ Eye Contact ☒ Inhalation ☒ Ingestion

Effects of acute exposure: Dry powder may cause irritation of skin. Prolonged exposure may cause drying or chapping of the skin.

Effects of chronic exposure: Not applicable

Exposure limits: Not established

Irritancy of product: Excessive inhalation of dust impedes respiration due to hygroscopic properties.

Sensitization to product: Not applicable

Carcinogenicity: Not available

Reproductive toxicity: Not available

Teratogenicity: Not available

Mutagenicity: Not available

Name of toxicological synergistic products: Not available

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**KELZAN XCD**

#### **SECTION IV: FIRST AID MEASURES**

**Skin contact:** Flush with plenty of water. Remove contaminated clothing.

**Eye contact:** Flush with plenty of water. If irritation develops, call a physician. Remove contact lenses. Remove contaminated clothing.

**Inhalation:** None anticipated. Remove to fresh air. Call a physician.

**Ingestion:** Essentially non-toxic. Contact a physician or poison control center for advice.

#### **SECTION V: PHYSICAL DATA**

**Physical state:** Solid.

**Appearance and odour:** Light beige powder, slight odour.

**Odour threshold:** Not available

**Specific gravity:** Not available

**Vapor pressure (mmHG):** Not available

**Vapor density (Air=1):** Not available

**Evaporation rate:** Not available

**Boiling point (°C):** Not available

**Freeze/Melting point (°C):** Not available

**pH:** Approximately neutral

**Co-efficient of water/oil distribution:** Not applicable

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**KELZAN XCD**

**SECTION VI: FIRE AND EXPLOSION DATA**

Conditions of flammability: Not applicable

Means of extinguishing: Dry chemical, alcohol foam, water fog, and CO2.

Flash point: Not applicable

Upper flammable limit: Not applicable

Lower flammable limit: Not applicable

Auto-ignition temperature: Not applicable

Hazardous combustion products: Carbon dioxide, carbon monoxide

Explosion data-sensitivity to mechanical impact: Not applicable

Explosion data-sensitivity to static discharge: Not applicable

**SECTION VII: REACTIVITY DATA**

Chemically unstable (conditions): Stable.

Product incompatible with: Strong oxidizing agents.

Conditions of reactivity: Combustible dust in the finely divided and suspended state.

Hazardous decomposition products: Carbon dioxide, carbon monoxide from thermal decomposition

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**KELZAN XCD**

### **SECTION VIII: PREVENTATIVE MEASURES**

**Personal protective equipment:** Suggest NIOSH/MESA approved dust mask.

**Specific engineering controls:** 10 changes per hour suggested.

**Procedures for leak/spill:** Sweep-up spilled material and repackage. Hose spill area very thoroughly. This product becomes very slippery when wet.

**Waste disposal:** Handle as non-hazardous material

**Handling procedures and equipment:** Product becomes very slippery when wet. Wash thoroughly after handling. Keep container closed. Exercise caution in the storage and handling of all chemical substances. Use in ventilated area.

**Storage requirements:** Product becomes very slippery when wet. Wash thoroughly after handling. Keep container closed. Exercise caution in the storage and handling of all chemical substances. Use in ventilated area.

**Special shipping information:** Not applicable

### **SECTION IX: PREPARATION**

**Date updated:** April 1, 2003

**Prepared by:** Product Safety Committee

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## MATERIAL SAFETY DATA SHEET

#1700, 407 2<sup>ND</sup> STREET S.W., CALGARY, ALBERTA T2P 2Y3  
 TELEPHONE: (403) 269-2242 FAX: (403) 269-2251  
 1-613-996-6666 - CANUTEC - Transportation Emergency  
 1-888-243-9771 - ChExSS - Chemical Exposure

### XANTHAN GUM

#### SECTION I: IDENTIFICATION OF PRODUCT

Product Name: XANTHUM GUM  
 Chemical Family: Polysaccharide Polymer  
 WHMIS Classification: Not controlled  
 Workplace Hazard: Not applicable

Product Use: Viscosifier  
 TDG Classification: Not Regulated  
 Packaging Group: Not applicable  
 PIN: Not applicable

#### SECTION II: INFORMATION ON INGREDIENTS

Ingredients	Percent	CAS Number	LD <sub>50</sub> (Species/Route)	LC <sub>50</sub> (Species/Route)
Xanthan Gum	100%	11138-66-2	Not available	Not Available

#### SECTION III: TOXICOLOGICAL PROPERTIES

Route of entry: ☒ Skin ☒ Eye Contact ☒ Inhalation ☒ Ingestion

Effects of acute exposure: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Effects of chronic exposure: Repeated or prolonged exposure is not known to aggravate medical condition.

Exposure limits: Not available

Irritancy of product: skin and eye irritant.

Sensitization to product: Not available

Cardiogenicity: Not available

Reproductive toxicity: Not available

Teratogenicity: Not available

Mutagenicity: Not available

Name of toxicological synergistic products: Not available

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## XANTHAN GUM

### SECTION IV: FIRST AID MEASURES

**Skin contact:** After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing. **Serious Skin Contact:** Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

**Eye contact:** Flush with plenty of water. If irritation develops, call a physician.

**Inhalation:** Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

**Ingestion:** Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

### SECTION V: PHYSICAL DATA

**Physical state:** Solid.

**Appearance and odour:** Light beige powder, slight odour

**Odour threshold:** Not available

**Specific gravity (°C):** 1.5

**Vapor pressure (mmHG):** Not available

**Vapor density (Air=1):** Not available

**Evaporation rate:** Not available

**Boiling point (°C):** Not available

**Freeze/Melting point (°C):** Not available

**pH (%):** 5.4-8.6

**Co-efficient of water/oil distribution:** Complete

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10P4



## XANTHAN GUM

### SECTION VI: FIRE AND EXPLOSION DATA

Conditions of flammability: May be combustible at high temperature  
Means of extinguishing: Dry chemical, foam, water fog, spray  
Flash point: Not available  
Upper flammable limit: Not available  
Lower flammable limit: Not available  
Auto-ignition temperature: Not available  
Hazardous combustion products: Not available  
Explosion data-sensitivity to mechanical impact: Not available  
Explosion data-sensitivity to static discharge: Combustible dust in the finely divided and suspended state.

### SECTION VII: REACTIVITY DATA

Chemically unstable (conditions): Stable.  
Product incompatible with: Strong oxidizing agents and caustic solutions  
Conditions of reactivity: Not applicable  
Hazardous decomposition products: Not applicable

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## XANTHAN GUM

### SECTION VIII: PREVENTATIVE MEASURES

**Personal protective equipment:** Suggest NIOSH/MESA approved dust mask. Splash goggles.

**Specific engineering controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

**Procedures for leak/spills:** Sweep-up spilled material and repackage. Hose spill area very thoroughly. This product becomes very slippery when wet.

**Waste disposal:** Dispose of material in accordance with local ordinances. Landfill is suggested.

**Handling procedures and equipment:** Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk; evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes.

**Storage requirements:** Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

**Special shipping information:** Not applicable

### SECTION IX: PREPARATION

Date updated: March 30, 2007

Prepared by: Product Safety Committee

All the recommendations and suggestions herein concerning this product are based upon tests and data believed to be reliable, however it is the user's responsibility to determine the safety, toxicity and sustainability for their own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Q'Max Solutions Inc. as to the effects of such use, the results to be obtained, or the safety and toxicity of the product nor does Q'Max Solutions Inc. assume any liability arising out of use by others. Nor is the information herein to be considered as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

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## MATERIAL SAFETY DATA SHEET

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 1-613-996-6666 - CANUTEC - Transportation Emergency  
 1-888-243-9771 - ChExSS - Chemical Exposure

**HT 40N**

### SECTION I: IDENTIFICATION OF PRODUCT

Product Name: HT 40 N  
 Chemical Family: Hydrocarbon  
 WHMIS Classification: Not controlled  
 Workplace Hazard: Not applicable

Product Use: Drill mud oil  
 TDG Classification: Not regulated  
 Packaging Group: Not applicable  
 PIN: Not applicable

### SECTION II: INFORMATION ON INGREDIENTS

Ingredients	Percent	CAS Number	LD <sub>50</sub> (Species/Route)	LC <sub>50</sub> (Species/Route)
Mixture of severely hydrotreated and hydrocracked base oil (petroleum) and other proprietary, non-hazardous additives.	100	Mixture	Acute Oral toxicity (LD50): >5000 mg/kg (rat) Acute Dermal toxicity (LD50): >2000 mg/kg (rabbit)	Acute Inhalation toxicity (LC50): >2300 mg/m <sup>3</sup> /4h (rat)

### SECTION III: TOXICOLOGICAL PROPERTIES

Route of entry: ☒ Skin ☒ Eye Contact ☒ Inhalation ☒ Ingestion

Effects of acute exposure: Short-term exposure is expected to cause only slight irritation, if any. To eyes and skin, ingestion of this product may lead to aspiration of the liquid, especially if vomiting occurs. This may result in chemical pneumonitis (inflammation of the lungs) and/or pulmonary edema (an accumulation of fluid in the lungs). May produce a laxative effect.

Effects of chronic exposure: Prolonged or repeated contact may defat and dry skin, and cause dermatitis.

Exposure limits: 8 hours TLV-TWA of 5 mg/m<sup>3</sup> based on ACGIH TLV for oil mist. STEL 10 mg/m<sup>3</sup> (oil mist)

Irritancy of product: Eye irritation with oil mist spray.

Sensitization to product: This product is not expected to be a skin/respiratory tract sensitizer.

Carcinogenicity: Not expected

Reproductive toxicity: Not expected

Teratogenicity: Not expected

Mutagenicity: Not expected

Name of toxicological synergistic products: Not expected

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HT 40N

#### SECTION IV: FIRST AID MEASURES

**Skin contact:** Quickly and gently, blot or brush away excess chemical. Wash gently and thoroughly with water and non-abrasive soap for 5 minutes or until chemical is removed. Remove contaminated clothing, shoes and leather goods (e.g., watchbands, belts, etc.). If irritation persists, repeat flushing. Obtain medical advice immediately. Completely decontaminate clothing, shoes and leather goods before reuse or discard.

**Eye contact:** No effects expected. If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 5 minutes or until the chemical is removed. If irritation persists, obtain medical advice.

**Inhalation:** Remove source of contamination or move victim to fresh air. If irritation persists, obtain medical advice.

**Ingestion:** NEVER give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. DO NOT INDUCE VOMITING. Have victim drink 240 to 300 mL (8 to 10 oz) of water to dilute material in stomach. If vomiting occurs naturally, rinse mouth and repeat administration of water. Obtain medical attention.

#### SECTION V: PHYSICAL DATA

**Physical state:** Viscous liquid.

**Appearance and odour:** Clear and bright viscous liquid. No odour or petroleum oil like.

**Odour threshold:** Not available

**Specific gravity:** 0.845 @ 15°C (59°F)

**Vapor pressure (mmHG):** Negligible at ambient temperature and pressure.

**Vapor density (Air=1):** Not available

**Evaporation rate:** Not available

**Boiling point (°C):** Not available

**Freeze/Melting point (°C):** Not available

**pH:** Not applicable

**Co-efficient of water/oil distribution:** Insoluble in water

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HT 40N

#### SECTION VI: FIRE AND EXPLOSION DATA

**Conditions of flammability:** Low fire hazard. This material must be heated before ignition will occur.

**Means of extinguishing:** Carbon dioxide, dry chemical, foam, water spray, fog and water.

**Flash point:** Closed Cup > or equal to 104°C (219 °F)

**Upper flammable limit:** Not available

**Lower flammable limit:** Not available

**Auto-ignition temperature:** Not available

**Hazardous combustion products:** Carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), part oxidized hydrocarbon fragments, smoke and irritating vapors as products of incomplete combustion.

**Explosion data-sensitivity to mechanical impact:** Do not cut, weld, heat, drill or pressurize empty container. Containers may explode in heat of fire.

**Explosion data-sensitivity to static discharge:** Not applicable

#### SECTION VII: REACTIVITY DATA

**Chemically unstable (conditions):** The product is stable under normal handling and storage conditions.

**Product incompatible with:** Reactive with oxidizing agents.

**Conditions of reactivity:** Reactive with oxidizing agents.

**Hazardous decomposition products:** May release CO<sub>x</sub>, NO<sub>x</sub>, part oxidized hydrocarbon fragment, smoke and irritating vapors when heated to decomposition.

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3004



HT 40N

## SECTION VIII: PREVENTATIVE MEASURES

### Personal protective equipment:

**Eyes:** As a minimum, safety glasses with side shields should be worn when handling this material.

**Body:** If this material may come in contact with the body during handling and use, we recommend wearing appropriate protective clothing to prevent contact with the skin. (Contact your PPE provider for more information.)

**Respiratory:** A minimum of NIOSH-approved air-purifying respirator with an organic vapor cartridge or canister with a dust, fume or mist filter (R, or P series) may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. A NIOSH-approved positive-pressure, air-supplied respirator or self-contained breathing apparatus may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits.

**Hands:** If this material may come in contact with the hands during handling and use, we recommend wearing gloves of the following material(s): Neoprene, Nitrile, Polyvinyl alcohol (PVA), Fluoro-elastomer. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns.

**Feet:** Wear appropriate footwear to prevent product from coming in contact with feet and skin.

**Specific engineering controls:** For normal application, special ventilation is not necessary. If user's operations generate vapors or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. Make-up air should always be supplied to balance air removed by exhaust ventilation. Ensure that eyewash station and safety shower are close to work-station.

**Procedures for leak/spills:** Consult current National Emergency Response Guide Book (NABRG) for appropriate spill measures if necessary. Extinguish all ignition sources. Stop leak if safe to do so. Dike spilled material. Use appropriate inert absorbent material to absorb spilled product. Collect used absorbent for later disposal. Avoid contact with spilled material. Avoid contaminating sewers, streams, rivers and other water courses with spilled material. Notify appropriate authorities immediately.

**Waste disposal:** Spent/used/waste product may meet the requirements of a hazardous waste. Consult your local or regional authorities. Ensure that waste management processes are in compliance with government requirements and local disposal regulations.

**Handling procedures and equipment:** Avoid contact with any sources of ignition, flames, heat, and sparks. Avoid eye contact. Avoid skin contact. Avoid inhalation of product vapors or mists. Empty containers may contain product residue. Do not pressurize, cut, heat, or weld empty containers. Do not reuse containers without commercial cleaning and/or reconditioning. Personnel who handle this material should practice good personal hygiene during and after handling to help prevent accidental ingestion of this product. Properly dispose of contaminated leather articles including shoes that cannot be decontaminated.

**Storage requirements:** Store away from incompatible and reactive materials (See section 5 and 10). Keep container tightly closed. Store in dry, cool, well-ventilated area.

**Special shipping information:** Not applicable

## SECTION IX: PREPARATION

Date updated: September 3, 2005

Prepared by: Product Safety Committee

All the recommendations and suggestions herein concerning this product are based upon tests and data believed to be reliable, however it is the user's responsibility to determine the safety, toxicity and sustainability for their own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Q-Max Solutions Inc. as to the effects of such use, the results to be obtained, or the safety and toxicity of the product nor does Q-Max Solutions Inc. assume any liability arising out of use by others. Nor is the information herein to be considered as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

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## MATERIAL SAFETY DATA SHEET

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 1-613-996-6666 - CANUTEC - Transportation Emergency  
 1-888-243-9771 - ChExSS - Chemical Exposure

### KELZAN XCD

#### SECTION I: IDENTIFICATION OF PRODUCT

Product Name: KELZAN XCD  
 Chemical Family: Polysaccharide gum  
 WHMIS Classification: Not applicable  
 Workplace Hazard: Not applicable

Product Use: Viscoifier  
 TDG Classification: Not applicable  
 Packaging Group: Not applicable  
 PIN: Not applicable

#### SECTION II: HAZARDOUS INGREDIENTS

Ingredients	Percent	CAS Number	LD <sub>50</sub> (Rat/Oral)	LC <sub>50</sub> (Species/Route)
Xanthan gum	-	11138-66-2	>5000 mg/kg	-

#### SECTION III: TOXICOLOGICAL PROPERTIES

Route of entry: ☒ Skin ☒ Eye Contact ☒ Inhalation ☒ Ingestion

Effects of acute exposure: Dry powder may cause irritation of skin. Prolonged exposure may cause drying or chapping of the skin.

Effects of chronic exposure: Not applicable

Exposure limits: Not established

Irritancy of product: Excessive inhalation of dust impedes respiration due to hygroscopic properties.

Sensitization to product: Not applicable

Carcinogenicity: Not available

Reproductive toxicity: Not available

Teratogenicity: Not available

Mutagenicity: Not available

Name of toxicological synergistic products: Not available

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**KELZAN XCD**

#### **SECTION IV: FIRST AID MEASURES**

**Skin contact:** Flush with plenty of water. Remove contaminated clothing.

**Eye contact:** Flush with plenty of water. If irritation develops, call a physician. Remove contact lenses. Remove contaminated clothing.

**Inhalation:** None anticipated. Remove to fresh air. Call a physician.

**Ingestion:** Essentially non-toxic. Contact a physician or poison control center for advice.

#### **SECTION V: PHYSICAL DATA**

**Physical state:** Solid.

**Appearance and odour:** Light beige powder, slight odour.

**Odour threshold:** Not available

**Specific gravity:** Not available

**Vapor pressure (mmHG):** Not available

**Vapor density (Air=1):** Not available

**Evaporation rate:** Not available

**Boiling point (°C):** Not available

**Freeze/Melting point (°C):** Not available

**pH:** Approximately neutral

**Co-efficient of water/oil distribution:** Not applicable

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**KELZAN XCD**

**SECTION VI: FIRE AND EXPLOSION DATA**

Conditions of flammability: Not applicable

Means of extinguishing: Dry chemical, alcohol foam, water fog, and CO2.

Flash point: Not applicable

Upper flammable limit: Not applicable

Lower flammable limit: Not applicable

Auto-ignition temperature: Not applicable

Hazardous combustion products: Carbon dioxide, carbon monoxide

Explosion data-sensitivity to mechanical impact: Not applicable

Explosion data-sensitivity to static discharge: Not applicable

**SECTION VII: REACTIVITY DATA**

Chemically unstable (conditions): Stable.

Product incompatible with: Strong oxidizing agents.

Conditions of reactivity: Combustible dust in the finely divided and suspended state.

Hazardous decomposition products: Carbon dioxide, carbon monoxide from thermal decomposition

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**KELZAN XCD**

### **SECTION VIII: PREVENTATIVE MEASURES**

**Personal protective equipment:** Suggest NIOSH/MESA approved dust mask.

**Specific engineering controls:** 10 changes per hour suggested.

**Procedures for leak/spills:** Sweep-up spilled material and repackage. Hose spill area very thoroughly. This product becomes very slippery when wet.

**Waste disposal:** Handle as non-hazardous material

**Handling procedures and equipment:** Product becomes very slippery when wet. Wash thoroughly after handling. Keep container closed. Exercise caution in the storage and handling of all chemical substances. Use in ventilated area.

**Storage requirements:** Product becomes very slippery when wet. Wash thoroughly after handling. Keep container closed. Exercise caution in the storage and handling of all chemical substances. Use in ventilated area.

**Special shipping information:** Not applicable

### **SECTION IX: PREPARATION**

**Date updated:** April 1, 2005

**Prepared by:** Product Safety Committee

All the recommendations and suggestions herein concerning this product are based upon tests and data believed to be reliable, however it is the user's responsibility to determine the safety, toxicity and sustainability for their own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Q'Max Solutions Inc. as to the effects of such use, the results to be obtained, or the safety and toxicity of the product nor does Q'Max Solutions Inc. assume any liability arising out of use by others. Nor is the information herein to be considered as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

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## MATERIAL SAFETY DATA SHEET

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 1-613-996-6666 - CANUTEC - Transportation Emergency  
 1-888-243-9771 - CHESS - Chemical Exposure

### STAFLO REGULAR

#### SECTION I: IDENTIFICATION OF PRODUCT

Product Name: STAFLO REGULAR  
 Chemical Family: Sodium Carboxymethylcellulose  
 WHMIS Classification: Not applicable  
 Workplace Hazard: Treat as nuisance dust

Product Use: Fluid loss reducer  
 TUG Classification: Not applicable  
 Packaging Group: Not applicable  
 PIN: Not applicable

#### SECTION II: HAZARDOUS INGREDIENTS

Ingredients	Percent	CAS Number	LD <sub>50</sub> (Species/Route)	LC <sub>50</sub> (Species/Route)
None				

#### SECTION III: TOXICOLOGICAL PROPERTIES

Route of entry: ☒ Skin ☒ Eye Contact ☒ Inhalation ☒ Ingestion

Effects of acute exposure: May cause mechanical irritation to the eyes.. High dust concentrations may cause coughing and sneezing

Effects of chronic exposure: Not applicable

Exposure limits: Not applicable

Irritancy of product: Low

Sensitization to product: Not applicable

Carcinogenicity: No information available

Reproductive toxicity: No information available

Teratogenicity: No information available

Mutagenicity: No information available

Name of toxicological synergistic products: No information available

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## STAFLO REGULAR

### SECTION IV: FIRST AID MEASURES

**Skin contact:** Wash skin thoroughly with soap and water. Remove contaminated clothing. Seek medical attention if any discomfort continues.

**Eye contact:** Flush with gently flowing warm water until particles are removed. If irritation persists obtain medical attention.

**Inhalation:** Move to fresh air. Apply oxygen or artificial respiration as required. If breathing difficulties or distress continues obtain medical attention.

**Ingestion:** If victim is fully conscious, rinse mouth then give 1 to 2 glasses of water. If symptoms develop obtain medical attention. Never give anything by mouth to an unconscious or convulsing victim.

### SECTION V: PHYSICAL DATA

**Physical state:** Solid.

**Appearance and odour:** Free flowing white powder; no appreciable odour

**Odour threshold:** Not applicable

**Specific gravity:** Not available

**Vapor pressure (mmHg):** Not applicable

**Vapor density (Air=1):** Not applicable

**Evaporation rate:** Not applicable

**Boiling point (°C):** Not applicable

**Freeze/Melting point (°C):** Not applicable

**pH:** 6.0-8.5 (1% sol'n)

**Co-efficient of water/oil distribution:** Soluble in water.

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## STAFLO REGULAR

### SECTION VI: FIRE AND EXPLOSION DATA

Conditions of flammability: Not applicable  
Means of extinguishing: Water spray, foam, dry chemical or CO<sub>2</sub>  
Flash point: Not applicable  
Upper flammable limit: Not applicable  
Lower flammable limit: Not applicable  
Auto-ignition temperature: Not applicable  
Hazardous combustion products: Oxides of carbon  
Explosion data-sensitivity to mechanical impact: Not applicable  
Explosion data-sensitivity to static discharge: Not applicable  
Unusual fire and explosion hazards: Dust/air mixtures may ignite violently upon exposure to sparks or sources of ignition.

### SECTION VII: REACTIVITY DATA

Chemically unstable (conditions): Stable. Hazardous polymerization will not occur.  
Product incompatible with: No listed compatible materials  
Conditions of reactivity: None known  
Hazardous decomposition products: Oxides of carbon and hydrocarbons upon combustion.

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## STAFLO REGULAR

### SECTION VIII: PREVENTATIVE MEASURES

**Personal protective equipment:** Suggest approved dust mask; nuisance dust. Use approved respirator with dust cartridges if level of airborne dust exceeds TLV. Suggest goggles or safety glasses with side-shields; nuisance dust. Ensure eyewash station and emergency shower available when handling chemicals.

**Specific engineering controls:** Use in well-ventilated area. Use local exhaust ventilation, process enclosure or other engineering controls to maintain level of airborne dust below TLV.

**Procedures for leak/spills:** Use appropriate safety equipment. Eliminate ignition sources. Vacuum or sweep-up if dry. If wet, pick up with dry material such as sand or dirt. Avoid flushing with water as material becomes slippery. Non-sparking tools should be used as dust/air mixtures may explode violently. Collect uncontaminated material in approved containers for disposal.

**Waste disposal:** Dispose in accordance with federal, provincial and local regulations. Landfill is suggested. It is the responsibility of the end-user to determine if material meets the criteria of hazardous waste at the time of disposal. Empty packaging must be disposed of, or recycled, in accordance with local regulations.

**Handling procedures and equipment:** Handle in well ventilated areas. Avoid dust generation. Practice good hygiene.

**Storage requirements:** Store in original container. Store in cool, dry area (hygroscopic).

**Special shipping information:** Not applicable

### SECTION IX: PREPARATION

Date updated: June 26, 2006

Prepared by: Product Safety Committee

All the recommendations and suggestions herein concerning this product are based upon tests and data believed to be reliable, however it is the user's responsibility to determine the safety, toxicity and sustainability for their own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Q'Max Solutions Inc. as to the effects of such use, the results to be obtained, or the safety and toxicity of the product nor does Q'Max Solutions Inc. assume any liability arising out of use by others. Nor is the information herein to be considered as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

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## MATERIAL SAFETY DATA SHEET

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 1-613-996-6666 - CANUTEC - Transportation Emergency  
 1-888-243-9771 - ChExSS - Chemical Exposure

### STAFLO REGULAR

#### SECTION I: IDENTIFICATION OF PRODUCT

Product Name: STAFLO REGULAR  
 Chemical Family: Sodium Carboxymethylcellulose  
 WHMIS Classification: Not applicable  
 Workplace Hazard: Treat as nuisance dust

Product Use: Fluid loss reducer  
 TDG Classification: Not applicable  
 Packaging Group: Not applicable  
 PIN: Not applicable

#### SECTION II: HAZARDOUS INGREDIENTS

Ingredients	Percent	CAS Number	LD <sub>50</sub> (Species/Route)	LC <sub>50</sub> (Species/Route)
None				

#### SECTION III: TOXICOLOGICAL PROPERTIES

Route of entry: ☒ Skin ☒ Eye Contact ☒ Inhalation ☒ Ingestion

Effects of acute exposure: May cause mechanical irritation to the eyes.. High dust concentrations may cause coughing and sneezing

Effects of chronic exposure: Not applicable

Exposure limits: Not applicable

Irritancy of product: Low

Sensitization to product: Not applicable

Carcinogenicity: No information available

Reproductive toxicity: No information available

Teratogenicity: No information available

Mutagenicity: No information available

Name of toxicological synergistic products: No information available

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## STAFLO REGULAR

### SECTION IV: FIRST AID MEASURES

**Skin contact:** Wash skin thoroughly with soap and water. Remove contaminated clothing. Seek medical attention if any discomfort continues.

**Eye contact:** Flush with gently flowing warm water until particles are removed. If irritation persists obtain medical attention.

**Inhalation:** Move to fresh air. Apply oxygen or artificial respiration as required. If breathing difficulties or distress continues obtain medical attention.

**Ingestion:** If victim is fully conscious, rinse mouth then give 1 to 2 glasses of water. If symptoms develop obtain medical attention. Never give anything by mouth to an unconscious or convulsing victim.

### SECTION V: PHYSICAL DATA

**Physical state:** Solid.

**Appearance and odour:** Free flowing white powder; no appreciable odour

**Odour threshold:** Not applicable

**Specific gravity:** Not available

**Vapor pressure (mmHg):** Not applicable

**Vapor density (Air=1):** Not applicable

**Evaporation rate:** Not applicable

**Boiling point (°C):** Not applicable

**Freeze/Melting point (°C):** Not applicable

**pH:** 6.0-8.5 (1% sol'n)

**Co-efficient of water/oil distribution:** Soluble in water.

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## STAFLO REGULAR

### SECTION VI: FIRE AND EXPLOSION DATA

Conditions of flammability: Not applicable

Means of extinguishing: Water spray, foam, dry chemical or  $\text{CO}_2$ .

Flash point: Not applicable

Upper flammable limit: Not applicable

Lower flammable limit: Not applicable

Auto-ignition temperature: Not applicable

Hazardous combustion products: Oxides of carbon

Explosion data-sensitivity to mechanical impact: Not applicable

Explosion data-sensitivity to static discharge: Not applicable

Unusual Fire and explosion hazards: Dust/air mixtures may ignite violently upon exposure to sparks or sources of ignition.

### SECTION VII: REACTIVITY DATA

Chemically unstable (conditions): Stable. Hazardous polymerization will not occur.

Product incompatible with: No listed compatible materials

Conditions of reactivity: None known

Hazardous decomposition products: Oxides of carbon and hydrocarbons upon combustion.

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## STAFLO REGULAR

### SECTION VIII: PREVENTATIVE MEASURES

**Personal protective equipment:** Suggest approved dust mask; nuisance dust. Use approved respirator with dust cartridges if level of airborne dust exceeds TLV. Suggest goggles or safety glasses with side-shields; nuisance dust. Ensure eyewash station and emergency shower available when handling chemicals.

**Specific engineering controls:** Use in well-ventilated area. Use local exhaust ventilation, process enclosure or other engineering controls to maintain level of airborne dust below TLV.

**Procedures for leak/spills:** Use appropriate safety equipment. Eliminate ignition sources. Vacuum or sweep-up if dry. If wet, pick up with dry material such as sand or dirt. Avoid flushing with water as material becomes slippery. Non-sparking tools should be used as dust/air mixtures may explode violently. Collect uncontaminated material in approved containers for disposal.

**Waste disposal:** Dispose in accordance with federal, provincial and local regulations. Landfill is suggested. It is the responsibility of the end-user to determine if material meets the criteria of hazardous waste at the time of disposal. Empty packaging must be disposed of, or recycled, in accordance with local regulations.

**Handling procedures and equipment:** Handle in well ventilated areas. Avoid dust generation. Practice good hygiene.

**Storage requirements:** Store in original container. Store in cool, dry area (hygroscopic).

**Special shipping information:** Not applicable

### SECTION IX: PREPARATION

Date updated: June 26, 2006

Prepared by: Product Safety Committee

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## MATERIAL SAFETY DATA SHEET

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1-613-996-6666 - CANUTEC - Transportation Emergency  
1-888-243-9771 - ChExSS - Chemical Exposure

### CALCIUM CARBONATE "325"

#### SECTION I: IDENTIFICATION OF PRODUCT

Product Name: CALCIUM CARBONATE "325"

Chemical Family: Alkaline Earth

WHMIS Classification: Not applicable

Workplace Hazard: Not applicable

Product Use: Bridging agent

TDG Classification: Not applicable

Packaging Group: Not applicable

FIN: Not applicable

#### SECTION II: HAZARDOUS INGREDIENTS

Ingredients	Percent	CAS Number	LD <sub>50</sub> (Rat/Oral)	LC <sub>50</sub> (Species/Route)
Calcium Carbonate (Limestone)	60-100	471-34-1	6450 mg/kg	
Crystalline Silica, Quartz	0-1	14808-60-7		

#### SECTION III: TOXICOLOGICAL PROPERTIES

Route of entry: ☒ Skin ☒ Eye Contact ☒ Inhalation ☒ Ingestion

Effects of acute exposure: Irritant

Effects of chronic exposure: No signs or symptoms of chronic exposure have been reported.

Exposure limits: Not applicable

Irritancy of product: May cause skin and eye irritation. If inhaled in form of dust, may cause respiratory tract, irritation/inflammation. Exposure may cause coughing and sneezing. Large amounts may cause chemical pneumonitis. Cause gastro-intestinal irritation. If ingested in large quantities may cause nausea, constipation and hypercalcaemia, hemorrhage.

Sensitization to product: Not applicable

Carcinogenicity: May contain crystalline silica which is carcinogenic to humans.

Reproductive toxicity: Not applicable

Teratogenicity: Not applicable

Mutagenicity: Not applicable

Name of toxicological synergistic products: Not applicable

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## CALCIUM CARBONATE "325"

### SECTION IV: FIRST AID MEASURES

**Skin contact:** Carefully and gently brush the contaminated body surfaces in order to remove all traces of Calcium Carbonate. Use a brush, cloth or gloves. Remove all Calcium Carbonate-contaminated clothing. Rinse contaminated area with lukewarm water for 15 to 20 minutes. If irritation occurs or persists seek medical attention..

**Eye contact:** Immediately rinse contaminated eye(s) with gently running lukewarm water for 15 to 20 minutes. If irritation occurs or persists seek medical attention.

**Inhalation:** Move sources of dust or move victim to fresh air. Obtain medical attention immediately. If victim does not breathe, give artificial respiration. Contact a physician immediately..

**Ingestion:** If victim is unconscious, wash out mouth with water. Have conscious person drink several glasses of water to dilute. Induce vomiting. Contact a physician immediately. Never give anything by mouth to an unconscious or convulsing person.

### SECTION V: PHYSICAL DATA

**Physical state:** Solid.

**Appearance and odour:** Odourless – white to gray solid or powder

**Odour threshold:** Not applicable

**Specific gravity:** 2.65 - 2.75

**Vapor pressure (mmHG):** Not applicable

**Vapor density (Air=1):** Not applicable

**Evaporation rate:** Not applicable

**Boiling point (°C):** Not applicable

**Freeze/Melting point (°C):** Not applicable

**pH:** 9.4

**Co-efficient of water/oil distribution:** Not applicable

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## CALCIUM CARBONATE "325"

### SECTION VI: FIRE AND EXPLOSION DATA

Conditions of flammability: Not applicable

Means of extinguishing: Calcium Carbonate does not burn. Use extinguishing media appropriate to surrounding fire conditions.

Flash point: Not applicable

Upper flammable limit: Not applicable

Lower flammable limit: Not applicable

Auto-ignition temperature: Not applicable

Hazardous combustion products: None

Explosion data-sensitivity to mechanical impact: Not applicable

Explosion data-sensitivity to static discharge: Not applicable.

### SECTION VII: REACTIVITY DATA

Chemically unstable (conditions): Stable

Product incompatible with: Fluorine, magnesium, aluminum, silicon, hydrogen, mercury, aluminum sulfate, ammonium sulfate, acids (Violent reaction with generating heat and possible explosion in confined area)..

Conditions of reactivity: Calcium Carbonate is a very stable chemical substance. Decomposition does not occur at normal temperatures (inferior to 600 °C). Reacts chemically with strong acids to form calcium based compounds and to liberate carbon dioxide.

Hazardous decomposition products: Decomposes at 870 °C to form carbon dioxide and calcium oxide

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## CALCIUM CARBONATE "325"

### SECTION VIII: PREVENTATIVE MEASURES

**Personal protective equipment:** NIOSH approved filtering anti-dust mask. Gauntlets Cuff style Tight fitting goggles with side shields. Wear clean, dry gloves, full length pants over boots, long sleeved shirt buttoned to the neck, head protection and approved eye protection selected for the working conditions.

**Specific engineering controls:** Enclose dust sources; use exhaust ventilation (dust collector) or other engineering controls at handling points to keep airborne levels below recommended exposure limits.

**Procedures for leak/spills:** Limit access to trained personnel. Sweep up and place in container. Use industrial vacuums for large spills. Avoid raising dust. Ventilate area.

**Waste disposal:** Transport to disposal area or bury. Federal, Provincial and Local regulations.

**Handling procedures and equipment:** Avoid skin and eye contact. Minimize dust generation. Wear protective goggles and incases of insufficient ventilation, use anti-dust mask.

**Storage requirements:** An eye wash station should be readily available where this is used. When storing, keep tightly closed containers in a cool, dry and well-ventilated area, away from acids.

**Special shipping information:** Not applicable.

### SECTION IX: PREPARATION

Date updated: March 8, 2005

Prepared by: Product Safety Committee

All the recommendations and suggestions herein concerning this product are based upon tests and data believed to be reliable, however it is the user's responsibility to determine the safety, toxicity and sustainability for their own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Q'Max Solutions Inc. as to the effects of such use, the results to be obtained, or the safety and toxicity of the product nor does Q'Max Solutions Inc. assume any liability arising out of use by others. Nor is the information herein to be considered as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

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## MATERIAL SAFETY DATA SHEET

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 1-613-996-6666 - CANUTEC - Transportation Emergency  
 1-888-243-9771 - ChExSS - Chemical Exposure

### Q'BREAK

#### SECTION I: IDENTIFICATION OF PRODUCT

Product Name: Q'BREAK  
 Chemical Family: Enzymes and acid blend  
 WHMIS Classification: D2A,D2B  
 Workplace Hazard: Respiratory tract sensitizer, Skin & eye irritant

Product Use: Breaker to separate water in Polyter  
 TDG Classification: Not Regulated  
 Packaging Group: Not applicable  
 PIN: Not applicable

#### SECTION II: HAZARDOUS INGREDIENTS

Ingredients	Percent	CAS Number	LD <sub>50</sub> (Species/Route)	LC <sub>50</sub> (Species/Route)
Citric Acid	30-60%	77-92-9	3000 mg/kg	Not determined
Amylase	1-5%	9000-90-2	Not determined	Not determined

#### SECTION III: TOXICOLOGICAL PROPERTIES

Route of entry: ☒ Skin ☒ Eye Contact ☒ Inhalation ☒ Ingestion

Effects of acute exposure: Dust may irritate the nose and throat. Inhalation may cause irritation of the mucous membranes. May cause gastrointestinal irritation and dental erosion if ingested. May cause irritation to eyes and skin.

Effects of chronic exposure: Repeated inhalation of enzyme aerosol may cause respiratory tract sensitization in susceptible individuals. Symptoms include shortness of breath, skin rashes and irritation to eyes.

Exposure limits: Not determined

Irritancy of product: Skin and eye irritant

Sensitization to product: Respiratory tract sensitizer

Carcinogenicity: Not determined

Reproductive toxicity: Not determined

Teratogenicity: Not determined

Mutagenicity: Not determined

Name of toxicological synergistic products: Not determined

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**Q'BREAK**

#### **SECTION IV: FIRST AID MEASURES**

**Skin contact:** Flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse.

**Eye contact:** Immediately flush with running water for 15 minutes. Hold eyelids apart to ensure rinsing of the entire surface of the eye and lids. Get immediate medical attention.

**Inhalation:** Remove to fresh air.

**Ingestion:** Do not induce vomiting. If conscious, give lots of water. Get immediate medical attention.

#### **SECTION V: PHYSICAL DATA**

**Physical state:** Powder

**Appearance and odour:** White granular, odourless

**Odour threshold:** Not applicable

**Specific gravity (°C):** 1.54

**Vapor pressure (mmHG):** Not determined

**Vapor density (Air=1):** Not determined

**Evaporation rate:** Not determined

**Boiling point (°C):** Not applicable

**Freeze/Melting point (°C):** Not determined

**pH (%):** 2.6 @ 10%, 2.4 @ 20% (wt/v)

**Solubility in water:** 1.62 g / 100 ml

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**Q'BREAK**

**SECTION VI: FIRE AND EXPLOSION DATA**

Conditions of flammability: Not applicable  
Means of extinguishing: Water, dry chemical, foam.  
Flash point: Not applicable  
Upper flammable limit: Not applicable  
Lower flammable limit: Not applicable  
Auto-ignition temperature: Not applicable  
Hazardous combustion products: Not applicable  
Explosion data-sensitivity to mechanical impact: Not applicable  
Explosion data-sensitivity to static discharge: Not applicable

**SECTION VII: REACTIVITY DATA**

Chemically unstable (conditions): Stable  
Product incompatible with: Alkali metals, organic acids, oxides of sulphur and strong bases.  
Conditions of reactivity: Not known  
Hazardous decomposition products: COx on combustion.  
Hazardous polymerization: Will not occur

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**Q'BREAK**

### **SECTION VIII: PREVENTATIVE MEASURES**

**Personal protective equipment:** NIOSH approved dust mask if ventilation is inadequate. Chemical resistant protective gloves. Safety glasses with side shields.

**Specific engineering controls:** General mechanical ventilation.

**Procedures for leak/spills:** Wear protective equipment. For small spills, sweep up and dispose of in approved waste containers. For large spills, shovel into approved waste containers. Keep out of sewers, storm drains, surface waters and soil.

**Waste disposal:** Dispose of contaminated product and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate federal, state and local regulatory agencies to ascertain proper disposal procedures.

**Handling procedures and equipment:** Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing.

**Storage requirements:** Store in a cool, dry, well-ventilated place away from incompatible materials. Keep bags or fiber drums dry at all times.

**Special shipping information:** Not applicable

### **SECTION IX: PREPARATION**

**Date updated:** January 2007

**Prepared by:** Product Safety Committee

All the recommendations and suggestions herein concerning this product are based upon tests and data believed to be reliable, however it is the user's responsibility to determine the safety, toxicity and sustainability for their own use of the product described herein. Since the actual use by others is beyond our control, no guarantee, expressed or implied, is made by Q'Max Solutions Inc. as to the effects of such use, the results to be obtained, or the safety and toxicity of the product nor does Q'Max Solutions Inc. assume any liability arising out of use by others. Nor is the information herein to be considered as absolutely complete since additional information may be necessary or desirable when particular or exceptional conditions or circumstances exist or because of applicable laws or government regulations.

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